

Cornwall Plaza
ORANGE COUNTY, NEW YORK
CORNWALL, NEW YORK

Final Engineering Report

NYSDEC Site Number: C336070

Prepared for:
Cornwall Shopping, LLC
c/o Philips International Holding Corp.
295 Madison Avenue, New York, NY 10017

Prepared by:
Vertex Engineering, PC
4518 Court Square, Suite 602
Long Island City, NY 11101
646-553-3500

NOVEMBER, 2015

CERTIFICATIONS

I, Richard J. Tobia, PE, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities at the site since February 2015, and I certify that the Remedial Action Work Plan prepared by ARCADIS of New York, Inc., and certified by Brian S. Peterson (NY PE License No. 084149), was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan. Prior to February 2015, the person responsible for the implementation of the remedial program activities included the Qualified Environmental Professional, Joseph J.C. Dultz, CHMM of Vertex Engineering, PC.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by Department.

I certify that any financial assurance mechanisms required by the Department pursuant to Environmental Conservation Law have been executed.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Richard J. Tobia, PE, of Vertex Engineering, PC, am certifying as Owner's Designated Site Representative for the site.

095039-1

NYS Professional Engineer #

Date

Signature

TABLE OF CONTENTS

CERTIFICATIONS.....	II
TABLE OF CONTENTS	IV
LIST OF ACRONYMS AND ABBREVIATIONS	VI
FINAL ENGINEERING REPORT	1
1.0 BACKGROUND AND SITE DESCRIPTION.....	1
2.0 SUMMARY OF SITE REMEDY.....	2
2.1 REMEDIAL ACTION OBJECTIVES	2
2.1.1 Groundwater RAOs	2
2.1.2 Soil RAOs	3
2.2 DESCRIPTION OF SELECTED REMEDY	3
3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS	4
4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED	4
4.1 GOVERNING DOCUMENTS	5
4.1.1 Site Specific Health & Safety Plan (HASP)	5
4.1.2 Quality Assurance Project Plan (QAPP).....	5
4.1.3 Construction Quality Assurance Plan (CQAP).....	6
4.1.4 Soil/Materials Management Plan (S/MMP).....	7
4.1.5 Storm-Water Pollution Prevention Plan (SWPPP)	7
4.1.6 Community Air Monitoring Plan (CAMP)	9
4.1.7 Contractors Site Operations Plans (SOPs)	9
4.1.8 Community Participation Plan	9

4.2 REMEDIAL PROGRAM ELEMENTS	9
4.2.1 Contractors and Consultants	9
4.2.2 Site Preparation.....	10
4.2.3 General Site Controls	11
4.2.4 Nuisance controls	13
4.2.5 CAMP results	13
4.2.6 Reporting	14
4.3 CONTAMINATED MATERIALS REMOVAL.....	14
4.3.1 Disposal Details	15
4.3.2 On-Site Reuse.....	16
4.4 REMEDIAL PERFORMANCE/DOCUMENTATION SAMPLING	16
4.5 IMPORTED BACKFILL.....	20
4.6 CONTAMINATION REMAINING AT THE SITE	21
4.6.1 Soil.....	21
4.6.2 Groundwater	22
4.6.3 Soil Vapor and Indoor Air.....	24
4.7 SOIL COVER SYSTEM	25
4.8 OTHER ENGINEERING CONTROLS.....	25
4.9 INSTITUTIONAL CONTROLS.....	27
4.10 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN.....	27
LIST OF TABLES	28
LIST OF FIGURES	29
LIST OF APPENDICES	30

LIST OF ACRONYMS AND ABBREVIATIONS

BCA	Brownfield Cleanup Agreement
CAMP	Community Air Monitoring Plan
CQAP	Construction Quality Assurance Plan
Cis-1,2-DCE	cis 1,2-dichloroethene
COC	Chain of Custody
CVOCs	Chlorinated Volatile Organic Compounds
DER	Division of Environmental Remediation
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DUSR	Data Usability Summary Reports
DTW	Depth to Water
EC/IC	Engineering Controls/Institutional Controls
EM	Electromagnetic
EVO	Emulsified Vegetable Oil
FER	Final Engineering Report
GPR	Ground Penetrating Radar
HASP	Health and Safety Plan
NAPL	Non Aqueous Phase Liquid
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PID	Photoionization Detector
PP	Priority Pollutant
PRP	Potentially Responsible Party
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RF	Radio Frequency
RI/FS	Remedial Investigation/Feasibility Study
RIR/RAR	Remedial Investigation Report/Remedial Action Report
ROD	Record of Decision
ROI	Radius of Influence
RP	Remedial Party
SCO	Soil Cleanup Objective
SEQRA	State Environmental Quality Review Act
S/MMP	Soil/Materials Management Plan
SMP	Site Management Plan
SOP	Standard Operating Procedures

SSD	Sub-slab Depressurization
SVOC	Semi Volatile Organic Compounds
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

FINAL ENGINEERING REPORT

1.0 BACKGROUND AND SITE DESCRIPTION

Cornwall Shopping, LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) in November 2006, to investigate and remediate a 3.8-acre property located in Cornwall, Orange County, New York. The property was remediated to commercial use and will continue to be used for commercial use in the future.

The site is located in the County of Orange, New York and is identified as Section 23 Block 3 and Lot 4 on the Orange County tax map for Section 23. The site is situated on an approximately 3.8-acre area bounded by commercial and residential properties to the north, commercial and residential properties to the south, commercial properties to the east, and commercial and residential properties to the west (Figure 1). A site plan is provided as Figure 2. The boundaries of the site are fully described in Appendix A.

An electronic copy of this Final Engineering Report (FER) with all supporting documentation is included as Appendix B.

2.0 SUMMARY OF SITE REMEDY

2.1 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) were identified for this site.

The overall objective of the remedial activities is to reduce the concentrations of chlorinated hydrocarbons in groundwater and saturated soil to prevent the migration of sub-slab vapor to indoor air, and to support the continued commercial use of the Site. The objectives of the remediation, which are based upon the NYSDEC Generic RAOs, are summarized below:

- Prevent direct contact with contaminated soil and inhalation of contaminants volatilizing from the soil.
- Prevent the migration of contaminants from the soil that would result in an impact to groundwater and/ surface water, or biota ingesting or coming in direct contact with the soil.
- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards and contact with, or inhalation of volatiles from contaminated groundwater.
- Prevent the migration of volatile organic compounds (VOCs) in the sub-slab vapor to indoor air.

2.1.1 Groundwater RAOs

RAOs for Public Health Protection

- Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer, to the extent practicable, to pre-disposal/pre-release conditions.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

2.1.2 Soil RAOs

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.2 DESCRIPTION OF SELECTED REMEDY

The site was remediated in accordance with the Decision Document signed on August 10, 2012 by the NYSDEC for the Remedial Action Work Plan (RAWP) dated April 3, 2012 and supplemented with the Summary of Sub-Slab Depressurization System Pilot Test Results and Revised Injection Method for Carbon Substrate Remedy Memorandum prepared by VERTEX dated July 23, 2013.

The factors considered during the selection of the remedy are those listed in 6NYCRR 375-1.8. The following are the components of the selected remedy:

1. Installation of a sub-slab depressurization (SSD) system beneath the former Key Foods leasehold (now DeCicco Family Markets) and Chan's Restaurant

leasehold (former dry cleaner) to reduce concentrations of sub-slab vapors and prevent vapor intrusion within the leaseholds (Figure 3);

2. Injection of a carbon substrate, emulsified vegetable oil (EVO), into the subsurface groundwater to enhance the ongoing process of reductive dechlorination to break down tetrachloroethene (PCE) to trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2 DCE), vinyl chloride and ultimately ethane and chloride, which are non-toxic (Figure 4);
3. Maintenance of a cover system consisting of asphalt parking lot areas and concrete building slabs to prevent human exposure to residual contaminated soil/fill remaining at the site (Figures 5 and 6);
4. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site (Appendix A);
5. Development and implementation of a Site Management Plan (SMP) for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting; and,
6. Periodic certification of the institutional and engineering controls listed above.

3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS

The remedy for this site was performed as a single project, and no interim remedial measures, operable units or separate construction contracts were performed.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RAWP for the Cornwall Plaza site (April 2012). All deviations from the RAWP are noted in Section 4.10.

4.1 GOVERNING DOCUMENTS

4.1.1 Site Specific Health & Safety Plan (HASP)

Site-Specific Health & Safety Plans were written to cover the various phases of the project. These phases include installation of the SSD system, installation and sampling of groundwater monitoring wells, installation of horizontal wells, injection of carbon substrate, and various aspects of these operations.

A Traffic Control Plan was prepared as part of the HASP. The plan was based upon the Department of Transportation Recommended Best Practices for Multiple Business and Large Facility Parking Areas. All remedial work performed under this Remedial Action was in full compliance with governmental requirements, including site and worker safety requirements mandated by Federal Occupational Safety and Health Administration (OSHA).

The HASPs were complied with for all remedial and invasive work performed at the Site. The HASPs are included as Appendix C.

4.1.2 Quality Assurance Project Plan (QAPP)

A QAPP describes the specific policies, objectives, organization, functional activities and quality assurance/ quality control (QA/QC) activities designed to achieve the project data quality objectives. A formal QAPP was not submitted by ARCADIS as part of the 2012 RAWP; however, quality assurance procedures were followed throughout the duration of the project. The quality assurance procedures ensured the data collected at the site would be reproducible and reliable and consisted of:

- Adherence to the scope of work (SOW) presented in RAWP
- Collection and analysis of duplicate samples
- Collection and analysis of blanks (field and trip)
- Analysis of samples within specified holding times
- Proper preservation of samples
- Adherence to strict Chain of Custody procedures

- Use of a New York State Department of Health-certified laboratory
- Field documentation of sampling

4.1.3 Construction Quality Assurance Plan (CQAP)

A Construction Quality Assurance Plan (CQAP) manages performance of the Remedial Action tasks through designed and documented QA/QC methodologies applied in the field and in the lab. A CQAP provides a detailed description of the observation and testing activities that were used to monitor construction quality and confirm that remedial construction was in conformance with the remediation objectives and specifications. A formal CQAP was submitted by ARCADIS as part of the 2012 RAWP; however, quality assurance procedures for the limited construction activities performed at the site were followed for the duration of the project.

The following table includes contact information for key personnel involved in the design and implementation of the remedy:

Name	Phone/Email Address
Owner & Remedial Party Cornwall Shopping, LLC c/o Philips International Holding Corp.	212-951-3828 spilevsky@pihc.com
Engineer Vertex Engineering, PC	646-553-3500 jdultz@vertexeng.com
Qualified Environmental Prof. or PE Vertex Engineering, PC Richard J. Tobia, PE	908-448-2627 rtobia@vertexeng.com
Remedial Party Attorney Sive Paget & Riesel, P.C. John-Patrick Curran	212-421-2150 jpcurran@sprlaw.com
NYSDEC Project Manager John B. Miller, P.E. Division of Environmental Remediation Albany, NY	Phone: (518) 402-9662 Fax: (518) 402-9679 John.miller@dec.ny.gov
NYSDEC Site Control Section Chief Region 3 Kelly Lewandowski	(518) 402-9553 Kelly.lewandowski@dec.ny.gov (845) 256-3000
NYSDEC HW Engineer Ed Moore	(845) 256-3137 Edward.moore@dec.ny.gov
NYSDOH Anthony C. Perretta	(518) 402-7880 BEEI@health.state.ny.us

The quality assurance procedures utilized ensured all site work was performed under the supervision of qualified personnel and generally consisted of:

- Daily oversight of subcontractors by environmental professionals;
- Monitoring of permanent and temporary observations wells and points to determine the effectiveness of EVO injections;
- Daily observations of injection location, EVO volume, pressure and depth;
- Project coordination meetings and conference calls between the Applicant and its representatives (property manager, lawyer), the Project Manager, remedial or environmental subcontractors, and other involved parties.
- Daily field notes and calls with the Project Manager.
- Regular updates to the NYSDEC Case Manager

4.1.4 Soil/Materials Management Plan (S/MMP)

Soils were not excavated from the site, accordingly, a Soil Management Plan was not required. Wastes generated at the site were removed and disposed of offsite by a licensed waste disposal contractor. Waste disposal activities are described in detail in Section 4.3.

4.1.5 Storm-Water Pollution Prevention Plan (SWPPP)

The remedial measures performed at the site did not warrant erosion and sediment controls for remedial construction to be performed in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control nor a site-specific Storm Water Pollution Prevention Plan. General housekeeping procedures (sweeping of the parking lot) were followed during intrusive activities to prevent or minimize contact with storm water.

As part of a routine site inspection during the injection activities on August 14, 2013, VERTEX inspected the on-site stormwater drainage system and observed EVO in a storm water drain (water was white in appearance). Immediately upon identification of the release, the injection of EVO was discontinued.

It was determined that vertical injection point #1107 was unknowingly advanced through a clay pipe connecting one of the site building roof drains to the stormwater management system for the Site. Due to its material of construction, this pipe was not identified during the ground penetrating radar (GPR) and electromagnetic (EM) survey performed prior to initiation of intrusive activities.

The EVO flowed into the clay pipe and traveled to the Site stormwater drainage system, which ultimately discharges to Idlewile Creek. An inspection of the Idlewile Creek confirmed that the EVO had discharged to the creek. As a result of the discovery, Connecticut Tank Removal, Inc., (CT Tank) of Bridgeport, Connecticut was contacted to perform emergency response actions to contain and recover EVO that had discharged to the Idlewile Creek. VERTEX also notified the NYSDEC (Dispatcher Maher, Operator No. 28.) of the discharge and response actions. The NYSDEC assigned Reference No. 1305257 to the incident.

While waiting for CT Tank to arrive on-site, VERTEX and Hawk Drilling Inc. (Hawk) performed recovery actions to remediate EVO from the various storm sewer catch basins between the Site and the creek. During the initial cleanup activities, VERTEX maintained constant communications with NYSDEC spill manager Mr. David Weitz. Mr. Weitz was informed that following the cleaning of the catch basins, the EVO had stopped entering the creek and the water color was clearing. Mr. Weitz requested CT Tank to inspect the Idlewile Creek with VERTEX. After completing the inspection, CT Tank contacted Mr. Weitz, who requested an additional inspection the following morning.

VERTEX inspected the creek the following day, and no evidence of EVO was observed other than some residue at the immediate pipe discharge. This area was cleaned with absorbent pads. In addition, no impacted flora or fauna was observed in the creek. VERTEX contacted Mr. Weitz and NYSDEC Case Manager Mr. John Miller. Mr. Miller gave a verbal response that the spill will not require any further reporting.

VERTEX requests that Spill No. 1305257 be formally closed.

4.1.6 Community Air Monitoring Plan (CAMP)

As the site remedial activities included only in-situ injection of EVO and installation of a SSD system with minimal soil disturbance or demolition, no CAMP was required for the remediation.

4.1.7 Contractors Site Operations Plans (SOPs)

The Remediation Engineer reviewed all plans and submittals for this remedial project (i.e. those listed above plus contractor and subcontractor submittals) and confirmed that they were in compliance with the RAWP. All remedial documents were submitted to NYSDEC and New York State Department of Health (NYSDOH) in a timely manner and prior to the start of work.

Plans submitted to the Town of Cornwall for approval included:

- Electrical permit for installation of the SSD system

Contractor/Subcontractor submittals to VERTEX for approval included:

- SSDS installation plans and cutsheets
- Horizontal well installation plans

4.1.8 Community Participation Plan

In June 2012 a Fact Sheet for the proposed site remedy and Public Comment Period were released. The Public Comment period ran from June 18 through August 1, 2012. Additional site details were made available on the NYSDEC website. Project documents were made available at the Cornwall Public Library and the NYSDEC Region 3 Office. A formal Community Participation Plan was not prepared.

4.2 REMEDIAL PROGRAM ELEMENTS

4.2.1 Contractors and Consultants

The following is a listing of subcontractors who performed work and their associated tasks;

- Horizontal Drilling – Ameridrill, Inc. of Levittown, Pennsylvania – Installed three horizontal wells beneath the site building.

- Injection Subcontractor – Hawk Drilling, Inc., of Hampton, New Jersey – Performed injections of EVO into the horizontal and vertical injection points.
- Monitoring Well Driller – Hawk Drilling, Inc., – Abandoned two shallow and one deep monitoring well damaged during the injection events and reinstalled the two shallow monitoring wells in the immediate vicinity of former wells. .
- Waste Disposal – Prime Environmental Incorporated (Prime) of Morris Plains, New Jersey (now known as Stericycle, Inc. of Lake Forest, Illinois) and Innovative Recycling Technologies, Inc., of Lindenhurst, New York. - Provided waste disposal services.
- Surveyor – L.S. & Associates of Middletown, New York – Surveyed all monitoring wells at site and prepared Environmental Easement documents.
- SSDS Installer – OBAR Systems, Inc., of Oak Ridge, New Jersey and Highlands Lakes, New Jersey – Performed SSDS pilot study, installed and activated SSD system.
- Electrician – Valentine Electric, Inc. of Blauvelt, New York - Wired SSD system.
- Utility Location Subcontractor - Sub-Surface Informational Surveys Incorporated (Sub-surface) of East Longmeadow, Massachusetts; Nova Geophysical Services (Nova) of Forest Hills, New York; Ground Penetrating Radar Services, Inc. (GPRS) of Toledo, Ohio; and GPR One Call (One Call) of Somerville, New Jersey – Performed subsurface utility markouts.

4.2.2 Site Preparation

Site Mobilization

Mobilization and site preparation work performed by VERTEX or its subcontractors included the following:

- Contacting Dig Safely New York to initiate a utility clearance request a minimum of three business days prior to the start of the remedial activities, to identify and mark out the locations of underground utilities (e.g., electricity, natural gas, water, sewer, telephone, etc.) and structures, at and near the work areas.
- Completion of geophysical surveys including the use of a magnetometer, EM, GPR, and radio frequency (RF) induction techniques within the proposed

injection area and locations where the building slab will be penetrated for the active SSD system extraction points to further identify subsurface utilities. The surveys were performed to assist in the identification of subsurface utilities and anomalies in anticipation of proceeding with the response actions described in the RAWP. Utilities and subsurface anomalies identified by the surveys were marked in the field on the ground surface

- Adjusting proposed injection point locations based upon utility mark outs and geophysical survey findings and mark all locations with spray paint.
- Mobilizing labor, equipment, materials and supplies needed to implement the remedial activities.
- Installation of temporary fencing or storage trailer to provide a secure storage location for injection materials and equipment to be used during remedial activities.

Permits

An electrical permit was required for the SSD system installation. The electrical permit was approved by New York Certified Electrical Inspectors, LLC on June 17, 2015.

Pre-Construction Meeting

A pre-construction meeting was not held with the NYSDEC; however, the NYSDEC Project Manager frequently visited the site during remedial activities.

Documentation of agency approvals required by the RAWP is included in Appendix D. Other non-agency permits relating to the remediation project are also provided in Appendix D.

No State Environmental Quality Review Act (SEQRA) requirements or substantive compliance requirements for attainment of applicable natural resource or other permits were needed during this Remedial Action.

4.2.3 General Site Controls

The Site is an active commercial strip mall. The remediation activities were performed within the Cornwall Wash and Dry, Chan's Peking House, the former Key Foods leaseholds (currently DeCicco's Family Markets) and the asphalt parking lot.

Installation of the active SSD system was performed after business hours to avoid impacting business operations and exposing employees and patrons to the work activities. All slab penetrations, trenches and boring locations were restored on a daily basis to avoid tripping hazards and potential vapor exposure to employees and customers.

The exterior injections were located within the driveway/parking areas to the southwest and north/northeast of the Site building (Figure 4). All exterior work was completed during business hours; therefore, the Site specific HASP addressed traffic control and safety. The traffic control plan was based upon the Department of Transportation Recommended Best Practices for Multiple Business and Large Facility Parking Area. The injection area and drilling areas were cordoned off prior to the start of work to provide a safety zone around the injection and drilling rigs.

All exterior boring locations were restored on a daily basis to avoid tripping hazards in the parking lot.

Complete and accurate record keeping was a critical part of the field implementation of the remedial action. Field notes were an important part of the review and validation process when interpreting results. In order to thoroughly document the field activities, the following records were maintained:

- Field logs – Field logs detailing daily activities, observations, and measurements were kept by field personnel. The information was recorded directly into a site-dedicated field book. Subcontractors were responsible for maintaining their own field logs.
- Chain of Custody Records (COCs) – COCs accompanied field samples from the site to the laboratory. A copy of the COC has been filed in the project folder.
- Instrument Calibration Records - Calibration and measurement data was documented on standardized calibration logs and filed in the project file located in the office. All calibration records provided by equipment rental agencies were saved and filed in the project folder.

Sampling equipment was decontaminated between sampling locations by removing all visible soil using a potable water rinse, followed by washing with Liquinox or other similar laboratory-grade detergent, and finally a rinse with distilled water.

The following is a listing of problems encountered during remedial activities and measures taken to resolve them:

- A mixture of water and EVO was released to the on-site stormwater conveyance system which discharges to Idlewile Creek via an underground storm water line. Section 4.1.5 summarizes the investigation, cleanup, and reporting associated with the release of the EVO mixture.
- The overhead piping for the SSD system was installed on the roof rather than within the ceiling plenum due to limited access and room to properly run and slope the necessary piping. Piping runs were redesigned for the roof and custom-designed supports were used to protect the roof and support and properly slope the pipe runs.
- Three monitoring wells were compromised during the injection process. Two shallow monitoring wells (MW-2 and MW-4) were replaced with new monitoring wells (MW-2R and MW-4R) drilled adjacent to the former wells. The compromised wells were properly abandoned. One deep well (MW-2B) was not replaced as no prior impacts were detected in the monitoring well.
- During installation of the horizontal wells, breaks in the well screen occurred. These breaks were repaired and installation continued as planned.

4.2.4 Nuisance controls

Remedial measures were performed on paved surfaces. Housekeeping measures consisted of maintaining paved areas in broom-swept condition. No truck washing, dust control or odor controls were necessary for the in-situ injection work performed. Disturbed areas were paved or patched with asphalt. The work areas within the parking lot were cordoned off during the remedial activities to provide a safety zone around the injection and drilling rigs. No odors were generated during the remedial activities. No public complaints were made during the remedial activities.

If EVO surfaced during the injections, this material was vacuumed into drums and totes and subsequently transported for proper offsite disposal.

4.2.5 CAMP results

There are no results to report as a CAMP was not necessary.

4.2.6 Reporting

Daily field logs were prepared by field staff during the remedial activities. The field logs summarized the day's activities, onsite equipment, personnel, and visitors, samples collected, and any issues related to health and safety, scope of work, equipment, and scheduling.

Summary memorandums were provided to the NYSDEC after the injection and groundwater sampling events and after installation of the SSD system.

All daily field notes and summary memorandums are included in electronic format in Appendix E.

The digital photo log required by the RAWP is included in electronic format in Appendix F.

4.3 CONTAMINATED MATERIALS REMOVAL

This section describes the removal activities for all contaminated media (soils, carbon, surplus EVO, etc.) that were produced during the remedial action. As no excavation of contaminated soil was performed at the site, contaminated media removal from the site consisted of byproducts of the remedial activities. The types and quantities of waste materials are as follows:

Activity	Type	Quantity	Disposal Method	Figure Location
EVO Injection	Waste EVO	(3) 275-gal Totes	Offsite disposal*	C
Horizontal Well Installation	Waste Asphalt & Soils	Drums	Offsite disposal*	A
Horizontal Well Installation	Waste Drilling Fluids (Soil, Drilling Mud & Kiln Dust)	(5) Roll-Off Containers	Offsite disposal*	A
Monitoring Well Installation	Waste Drill Cuttings	Drums	Offsite disposal*	B
Groundwater Sampling	Carbon	(1) Drum	Offsite disposal*	D

* Via waste disposal contractor

These materials were disposed of offsite by licensed waste contractors and properly licensed disposal or recycling facilities. Waste disposal documentation are included as Appendix G. A site plan depicting the location of the various areas where waste was generated is provided as Figure 7.

A list of the standards for the contaminants of concern for this project is provided below :

Contaminant	SOIL (mg/kg)			GROUNDWATER (ug/L)	
	Unrestricted Use SCO	Commercial SCO	Protection of Groundwater	AWQS	NY-TOGS-GA
PCE	1.3	150	1.3	5	5
TCE	0.47	200	0.47	5	5
cis 1,2-DCE	0.25	500	0.25	5	5
Vinyl Chloride	0.02	13	0.02	2	2

4.3.1 Disposal Details

The table below presents the total quantities of each category of material removed from the site, the disposal locations, and a summary of the samples collected to characterize the waste.

Activity	Type	Container	Quantity	Disposal Facility	Transporter Name/License Number
EVO Injection	Waste EVO	3 Totes	2,000 pounds	Republic Environmental Systems (PA) LLC	Disposal Consultant Services, Inc./NJR000063677
Horizontal Well Installation	Waste Drilling Fluids (Soil,	5 Roll Off Containers	74.35 tons	Conestoga Landfill	Innovative Recycling Technologies, Inc./5081145249

Activity	Type	Container	Quantity	Disposal Facility	Transporter Name/License Number
	Drilling Mud & Kiln Dust)				
Monitoring Well Installation	Waste Drill Cuttings	9 Drums	4,500 pounds	Republic Environmental Systems (PA) LLC	Disposal Consultant Services, Inc./ NJR000063677
Groundwater Sampling	Carbon	1 Drum	500 pounds	Republic Environmental Systems (PA) LLC	Disposal Consultant Services, Inc./ NJR000063677

Copies of the manifests and bills of lading are included in electronic format in Appendix H.

4.3.2 On-Site Reuse

No waste materials generated from remedial actions were reused on-site.

4.4 REMEDIAL PERFORMANCE/DOCUMENTATION SAMPLING

Post Remedial Action Sampling Events

Groundwater

Between July 29, 2013 and September 20, 2013, VERTEX commenced the initial carbon substrate injection application in accordance with the RAWP. The remedial activities included the injection of EVO into 117 vertical injection points and the three directionally-drilled permanent, horizontal wells. The directionally drilled horizontal wells were installed between August 28, 2013 and September 6, 2013. Injection into the horizontal wells was conducted between September 17, 2013 and November 22, 2013.

Between March 5, 2014 and March 14, 2014, VERTEX commenced a second carbon substrate injection application in accordance with the RAWP. The remedial activities included the injection of EVO into 67 vertical injection points and additional injections into the existing horizontal injection wells.

A total of 7,128 gallons of EVO was injected into the subsurface along with water to provide a carbon source to stimulate the ongoing bioremediation of the site contaminants.

The EVO was sourced from Terra Systems, Inc., and is their 60% SRS-FRL large droplet emulsified vegetable oil (EVO) substrate with the following characteristics:

1. contains a slow release carbon source of 60 percent vegetable oil
2. contains a fast release carbon source of at least 4% sodium lactate
3. includes a nutrient package with at least 0.25 µg/L B12, plus yeast extracts, nitrogen and phosphorus to support growth of the anaerobic microbial population.
4. has a neutral pH
5. has a mean droplet size of 5 µm
6. Does not exceed standards for RCRA metals

The EVO was supplied in 275-gallon totes.

The following table summarizes the post remediation groundwater monitoring events:

Sampling Date	Monitoring Wells Sampled	Analysis	Comments
February 20, 2014	MW-1R, MW-3, MW-3B, MW-7, MW-11, MW-12, MW-12B, MW-13	VOCs	MW-2, MW-2B, and MW-4 damaged during injection; abandoned MW-1B, MW-6, MW-6B, MW-8, MW-9, and MW-10 inaccessible due to large snow piles and ice
June 30, 2014 and July 1, 2014	MW-1R, MW-1B, MW-3, MW-3B, MW-5 to 9, MW-6B	VOCs, BIO 1, FLD	None
November 24, 2014	MW-1R, MW-3, MW-6, MW-7, and MW-8	VOCs, BIO 1, FLD	CVOCs not detected in monitoring wells MW-1B, MW-3B, MW-5, MW-6B, and MW-9 historically; not sampled
February 18 and 19, 2015	MW-3, MW-3B, MW-5 to 9, MW-6B	VOCs, BIO 1, FLD	MW-1R covered by snow pile; not sampled
April 24, 2015	MW-1R, MW-2R, MW-4R	VOCs, BIO 1, FLD, BIO 2	Sampled wells installed subsequent to February 2015 or was not accessible at that time (MW-1R)
July 30 and 31, 2015	MW-1R, MW-2R, MW-3, MW-4R, MW-6 to 8	VOCs, BIO 1, FLD	None

*NOTE: In April of 2015, VERTEX reinstalled MW-2 (MW-2R) and MW-4 (MW-4R) adjacent to the prior wells with the same well construction specifications as the original wells.

BIO 1 = Bioremediation parameters include: dissolved gases (methane, ethane, ethane), dissolved iron, total alkalinity, sulfate, dissolved organic carbon.

BIO 2 = Chloride, nitrate, volatile fatty acids (VFA), dissolved manganese

FLD = Field Parameters include: pH, oxidation reduction potential (ORP), conductivity, dissolved oxygen

Vapor Intrusion

Indoor air and sub-slab soil gas samples were collected on September 11, 2015 following the installation of the SSD system and continuous operation for a minimum of 30 days. The samples were collected to evaluate the effectiveness of the SSD system. The SSD system installation is explained in detail in Section 4.8.

Sampling Procedure

Groundwater

Prior to the collection of groundwater samples, VERTEX measured depth to water (DTW) using a probe which is capable of measuring to 0.01 feet (Table 1).

Samples were collected in general accordance with USEPA Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells. Groundwater samples were collected in laboratory-supplied pre-cleaned containers, preserved on ice, and submitted in coolers under a Chain of Custody record for laboratory analysis to a New York State-certified laboratory. Groundwater samples were analyzed for one or more of the following: VOCs plus a forward library search (VOC +10) via USEPA Method 8260C, dissolved iron and manganese via USEPA Method 6020A, dissolved gasses via USEPA Method RSK-175, chloride via USEPA Method 9251, total alkalinity via USEPA Method 2320B, dissolved organic carbon via USEPA Method 9060A, nitrogen and nitrate via USEPA Method 4500NO3-F, and sulfate via USEPA Method 9038.

Vapor Intrusion

VERTEX completed a pre-sampling site survey to evaluate the storage of potential materials within the grocery and restaurant spaces that could have contributed to

background indoor air quality issues. There were no materials identified during the site survey that were atypical of grocery and restaurant use.

Indoor air samples and ambient air samples were collected over an approximately 8-hour period using 6-liter SUMMA canisters. The indoor air samples were collocated with the respective sub-slab soil gas sample. An exterior ambient air sample (Ambient) was also collected to evaluate exterior background air quality in relation to the indoor air quality samples. Interior samples were collected in areas to match former locations (Figure 8)

Sub-slab soil gas samples were collected from permanent monitoring points described in Section 4.8. Teflon tubing was inserted into the permanent monitoring point to facilitate the collection of soil gas from beneath the concrete slab into stainless steel 2.7-liter Summa canisters. The tubing was connected to the SUMMA canister using compression fitting. A seal consisting of non VOC-emitting modeling clay was utilized to seal the tubing within the core hole to ensure no air leakage. One sample train of the three was tested for leaks in accordance with the NYSDEC's leak check procedure described in Section 2.7.5 of the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The leak test was acceptable.

Indoor and ambient weather conditions including temperature and atmospheric pressure were collected and recorded on field sampling data sheets during the sampling program. The vapor intrusion samples were collected into laboratory-supplied, pre-cleaned SUMMA canisters and were submitted to Alpha Analytical for laboratory analysis of VOCs by USEPA Method TO-15.

Post Remediation Results

Groundwater

Post-remediation groundwater results were compared to pre-remediation (baseline) results collected on March 22, 2011 (ARCADIS). Based upon the groundwater data collected to date, accelerated bioremediation via anaerobic dechlorination of CVOCs is occurring at the Site in areas where EVO was injected. The most recent sampling event indicates that EVO may be depleted in some areas as VOC

concentrations have rebounded slightly in some monitoring wells. A table and figure summarizing all sampling is included as Table 2 and Figure 9 and all exceedances of NYSDEC groundwater standards are highlighted.

Indoor Air

Post remediation indoor air (IA) and sub-slab (SS) soil gas samples were compared to the NYSDOH Indoor Air and Sub-Slab Criteria. Based upon the sub-slab data collected to date, CVOC contaminant concentrations have decreased significantly with the exception of sub-slab sampling location CSS-2 located at the rear of Chan's Restaurant. The concentration of PCE in sub-slab sample location CSS-1 decreased from 4,700 ug/m³ to 113 ug/m³ and in indoor air, KFIA-1, decreased from 3,300 ug/m³ to 183 ug/m³. The concentration of PCE in CSS-2 increased from 1,800 ug/m³ to 3,700 ug/m³. The TCE concentration in CSS-1 decreased from 54 ug/m³ to 1.27 ug/m³ and the concentration in KFSS-1 decreased from 24 ug/m³ to 2.79 ug/m³. The concentration of TCE detected in CSS-2 increased from 37 ug/m³ to 303 ug/m³. PCE was also detected in indoor air sample CIA-2. The concentration increased from 1.52 ug/m³ in 2007 to 260 ug/m³ in 2015. No other compounds were detected in excess of the Indoor Air or Sub-Slab Criteria.

A table and figure summarizing all air sampling is included in Table 3 and Figure 8, respectively, and all exceedances of NYSDOH Indoor Air and Sub-Slab Criteria are highlighted. Table 4 compares the indoor air data to the NYSDOH Matrices.

QA/QC procedures followed throughout the project are summarized in Section 4.1.2. Data Usability Summary Reports (DUSRs) were prepared for endpoint data generated in this remedial performance evaluation program. These DUSRs are included in Appendix I, and associated RWP is provided electronically in Appendix J.

4.5 IMPORTED BACKFILL

No imported backfill was used for the remedial measures selected for the site.

4.6 CONTAMINATION REMAINING AT THE SITE

4.6.1 Soil

Soil contamination was previously detected at concentrations exceeding the NY Technical and Administrative Guidance Memorandum (TAGM) 4046 and 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) in 2005. During a June 10, 2010 site meeting and in correspondence dated June 14, 2010, the NYSDEC directed Cornwall Shopping to collect soil samples to characterize the environmental quality of the soils that will remain below the paved parking areas and concrete slab Site buildings. ARCADIS completed the soil characterization sampling in August 2010 and reported the findings in the Revised Remedial Investigation Report/Remedial Action Report (RIR/RIR) Addendum submitted to the NYSDEC in January 2011.

ARCADIS collected a total of ten soil samples from nine boring locations (SB-1 through SB-9) on August 19, 2010. Borings were located throughout the Site to achieve general site coverage. All samples were analyzed for Priority Pollutant (PP) Metals via USEPA Methods 6010 and 7471, polychlorinated biphenyls (PCB) via USEPA Method 8082, semi-volatile organic compounds (SVOC) via USEPA Method 8270 and pesticides via USEPA Method 8081.

The following SVOCs were detected above the TAGM SCO in place at the time of sampling:

- Benzo(a)anthracene in sample SB-2(4-4.5)
- Benzo(a)pyrene in samples SB-2(1-1.5) and SB-2(4-4.5)
- Dibenzo(a,h)anthracene in sample SB-2(1-1.5)

Beryllium, chromium, nickel and zinc were detected at concentrations above the TAGM SCO in all soil samples collected August 19, 2010; however, the concentrations detected in all the soil samples are within the typical Eastern United States background ranges for the beryllium (0 mg/kg - 1.75 mg/kg), chromium (1.5 mg/kg - 40 mg/kg) and nickel (0.5 mg/kg – 25 mg/kg).

The TAGM SCO were rescinded on December 3, 2010 and replaced with the SCO listed in NYCRR Part 375. Under the new guidance, the concentrations of all

SVOCs and metals exceeding the TAGM SCO were below the NYCRR Part 375 UUSCO. Additionally, no pesticides, PCB, or other metals and SVOCs were detected above the NYCRR Part 375 UUSCO, Residential Soil Cleanup Objectives (RSCO) or Restricted Use Protection of Groundwater (RUPG).

Soil contamination at the site has been characterized and is currently capped with asphalt pavement and/or building concrete slabs preventing a direct contact exposure pathway. Further soil sampling is not required as proposed in the Revised RIR/RIR Addendum prepared by ARCADIS dated January 5, 2011. The proposal was accepted by the Department in a letter dated August 14, 2012. Furthermore, residual VOC soil impacts were likely addressed during the injection events to remediate groundwater.

The site entered the Track 4 cleanup track on January 3, 2012. Track 4 utilizes site-specific information and guidance to identify SCOs for the restricted use of the property and restricted groundwater use. An industrial/engineering control can be utilized to prevent exposure to contamination with approvals by the NYSDEC and NYSDOH; however, surface soils must meet the requirements of the generic tables. The following table summarizes the site-specific SCOs (soil) for the site contaminants of concern:

Contaminant	Unrestricted Use SCO	Commercial SCO	Protection of Groundwater
PCE	1.3	150	1.3
TCE	0.47	200	0.47
cis 1,2-DCE	0.25	500	0.25
Vinyl Chloride	0.02	13	0.02

All standards are in milligrams per kilogram (mg/kg).

Table 5 and Figure 10 summarize the results of all soil samples remaining at the site after completion of Remedial Action that exceed the Track 1 (unrestricted) SCOs.

4.6.2 Groundwater

Between July 29, 2013 and September 20, 2013 and between March 5, 2014 and March 14, 2014, VERTEX oversaw the injections of EVO in accordance with the RAWP.

Post injection concentrations of CVOCs (PCE, TCE, cis-1,2-DCE) have generally decreased in all monitoring wells (MW-1R, MW-2/2R, MW-3, MW-4/4R, MW-6, MW-8, and MW-11) that had exceedances since March 2011 except in MW-7 where PCE concentrations have remained consistent or increased slightly. The sampling results were compared to the NY Ambient Water Quality Standards (AWQS) & Guidance Values, Class GA as per Division of Water Technical & Operational Guidance Series (1.1.1) (GV). Five of the nine on-site monitoring wells contain concentrations of VOCs exceeding the NY AWQS & GV during the most recent groundwater sampling event in July 2015.

VOC contamination exceeding the NY AWQS and GV is limited to the overburden groundwater in the central portion of the site north of the building. Overburden wells with concentrations remaining above the AWQS and GV are screened between 6 and 20 ft bgs (Figure 9).

Detectable PCE concentrations remaining range from 0.66 ug/L in MW-2R to 740 ug/L in MW-3. Detectable TCE concentrations range from 1.1 ug/L in MW-7 to 60 ug/L in MW-4R. Detectable cis-1,2-DCE concentrations range from 3.3 ug/L in MW-8 to 260 ug/L in MW-4R. Detectable vinyl chloride concentrations range from 0.57 at MW-8 to 14 ug/L in MW-4R.

The concentrations of PCE, TCE, cis-1,2-DCE, and vinyl chloride in groundwater at the site have generally decreased since the pre-remedial action (baseline) sampling event in March 2011. During the most recent sampling event, the concentrations of PCE, TCE, cis-1,2-DCE, and vinyl chloride rebounded in monitoring well MW-3, indicating a third injection event of limited scope may be necessary. Further groundwater monitoring is recommended to determine if this additional injection event is warranted.

Monitoring wells MW-1R, MW-2R, and MW-6 have shown highly favorable conditions for continuing reductive dechlorination: high dissolved organic carbon (DOC), high methane, high dissolved iron, low sulfate, low oxidation reduction potential (ORP), and a marked decreasing VOC trend. Based on the data, there appears to be a sufficient quantity of EVO remaining in this area for continued reductive dechlorination.

Monitoring wells MW-7 and MW-8 have shown somewhat favorable conditions for continuing reductive dechlorination: low to mid-levels of DOC, medium methane, low dissolved iron, and high sulfate. MW-8 is showing a decreasing VOC trend whereas MW-7 VOC concentrations are stable.

Monitoring well MW-3 and MW-4R are exhibiting less favorable conditions than the other wells for continuing reductive dechlorination: mid-level DOC, low methane, low dissolved iron, high sulfate, high dissolved oxygen (DO). These wells have shown significant decreasing VOC trend but may be depleted of EVO. Concentrations of VOCs have rebounded in MW-3.

Table 2 and Figure 11 summarize the results of all groundwater samples as of July 2015 at the site after completion of Remedial Action that exceed the NYSDEC groundwater standards.

4.6.3 Soil Vapor and Indoor Air

Sub-slab soil vapor samples were collected from beneath the slab of Chan's Restaurant and the former Key Foods (currently DeCicco) leasehold in September 2015. This is the first event since the installation and startup of the SSD system. The results were compared to the NYSDOH Sub-Slab Criteria. PCE was detected in sub-slab soil gas at concentrations ranging from 113 ug/m³ in CSS-1 to 3,700 ug/m³ in CSS-2. These concentrations exceeded the NYSDOH Sub-Slab Criteria of 30 ug/m³. TCE concentrations ranged from 1.27 ug/m³ in CSS-1 to 303 ug/m³ in CSS-2. The concentration of TCE detected in CSS-2 exceeded the NYSDOH Sub-Slab of 5 ug/m³.

Indoor air samples were also collected from Chan's and Key Foods in September 2015. TCE was detected in one of the three samples at a concentration of 260 ug/m³ which exceeds the most stringent NYSDOH Indoor Air Criteria of 3 ug/m³.

Based on the NYSDOH Decision Matrices, mitigation is required due to the high concentration of TCE detected in sample CIA-2 (rear portion of Chan's Restaurant). Section 4.8 summarizes the mitigation steps in place at the site. It is surmised that the high indoor air concentrations in the rear of the restaurant are due to the interior negative pressure induced by the exhaust blowers used during operation of the kitchen. The installed sub slab system is not imparting a vacuum great enough to overcome the vacuum imparted by the kitchen fans. It is recommended that a second sample of indoor air be collected to confirm the concentrations, and if necessary, a separate SSDS blower be installed in the rear of Chan's Restaurant to mitigate the indoor air concentrations.

Table 3 and Figure 8 summarize the results of all air samples remaining at the site after completion of Remedial Action that exceed the NYSDOH Indoor Air and Sub-Slab Criteria.

Since contaminated soil, groundwater, and soil vapor remain beneath the site after completion of the Remedial Action, Institutional and Engineering Controls are required to protect human health and the environment. These Engineering and Institutional Controls (ECs/ICs) are described in the following sections. Long-term management of these EC/ICs and residual contamination will be performed under the SMP approved by the NYSDEC.

4.7 SOIL COVER SYSTEM

Exposure to any remaining contamination in soil at the site is prevented by a soil cover system that was in place at the site at the time of remedial measures were taken. This cover system is comprised of a minimum of asphalt pavement, concrete-covered sidewalks, and concrete building slabs, and landscaped areas. Figure 6 details the as-built cross sections that were in existence prior to remediation for each remedial cover type used on the site. Figure 5 shows the location of each cover type in existence at the Site prior to remedial measures enacted.

An Excavation Work Plan is not needed at the site.

4.8 OTHER ENGINEERING CONTROLS

Since remaining contaminated soil, groundwater, and soil vapor exists beneath the site, EC are required to protect human health and the environment. The site has the following primary Engineering Controls, as described in the following section.

An active SSD system to prevent the migration of vapors into the buildings from sub-slab and groundwater has been installed in the easternmost site building, within the DeCicco's leasehold. The radius of influence (ROI) of the northwestern system was installed to include the Chan's Peking Restaurant leasehold. The system was installed in two parts on June 22 through 24, 2014 and May 18 through 22, 2015. The system has been tested and is fully operational since August 6, 2015.

Eight extraction points and six sub-slab monitoring points were installed in the grocery store. Two of the extraction points are installed along the demising wall between the grocery store and Chan's. Four systems (one blower per system) were installed to induce a vacuum beneath the building slab. Two additional monitoring points were installed within the Chan's leasehold upon completion of the electrical connection.

Based on the results of the pilot test in 2013, a ROI of approximately 30 feet at an airflow rate ranging between 4 and 9 cfm was estimated for the system. The location of

the extraction points were selected based upon sub slab concentrations, subsurface and surface obstructions, and the calculated ROI.

The SSD system piping includes a vent pipe installed within a void space extending approximately 1-foot below the building concrete floor at each extraction point. The pipe was sealed to the existing floor to prevent “short circuiting” and provide the best possible subsurface vacuum from each point. The suction point riser (steel) extends vertically to the roof. On the roof, connecting piping (PVC) travels horizontally as shown on Figure 3 to one of four roof-mounted fans. The PVC vent piping running along the roof is 3-inches in diameter with the exception of the piping associated with system 2 which is 2-inches in diameter. Air flow and vacuum within each system is controlled with a valve installed on each SSD system line and through the variable speed control for each electrical fan.

Sub-slab vapors are being removed using four roof-mounted OBAR GBR76 compact radial blowers (GBR76). Each GBR76 blower is connected to up to three suction points. A panel with a vacuum gauges and visible alarm light was installed to monitor the SSD system operation and notify on-site personnel if the SSD system is not functioning under normal operational parameters. Electrical service was already present at the facility. However, to separate the electrical costs associated with the operation of the SSD system from the DeCicco leasehold operation, the SSD system was connected to a separate electrical meter and breaker. The system was balanced at the time of startup by closing/opening valves, and/or raising or lowering fan power to extract air at the optimum flow and pressure rates indicated in the pilot test described above.

To evaluate the initial effectiveness of the SSD system operation, VERTEX performed the following:

- Conducted negative pressure tests using a differential pressure gauge to evaluate the induced vacuum below the building slab during normal operation of the SSD system.
- Conduct smoke tests to evaluate cracks or leaks in the building floor/foundation that may need to be sealed to increase SSD system efficiency; and
- Completed sub-slab and indoor air screening/testing to evaluate concentrations of CVOCs in indoor air, as detailed in the approved RAWP.

Procedures for monitoring, operating and maintaining the SSD system are provided in the Operation and Maintenance (O&M) Plan in Section 4 of the SMP. The

Monitoring Plan also addresses inspection procedures that must occur after any severe weather condition has taken place that may affect on-site ECs.

4.9 INSTITUTIONAL CONTROLS

The site remedy requires that an environmental easement be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to commercial uses only.

The environmental easement for the site was executed by the Department on July 14, 2015 and filed with the Orange County Clerk on August 11, 2015. The County Recording Identifier number for this filing is 3020-746284. A copy of the easement and proof of filing is provided in Appendix A.

4.10 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

The following deviations were noted during the remediation activities:

- A mixture of water and EVO was released to the on-site stormwater conveyance system and discharged to Idlewile Creek. Section 4.1.5 summarizes the investigation, cleanup, and reporting associated with the release of the EVO mixture.
- The overhead piping for the SSD system was run on the roof rather than within the ceiling plenum due to limited access and room to properly run and slope the necessary piping. Piping runs were redesigned for the roof and custom-designed supports were used to protect the roof and support and properly slope the pipe runs.
- Three monitoring wells were compromised during the injection process. The two shallow wells were abandoned and reinstalled. The one deep well was not reinstalled as there were no impacts detected prior to the injections.
- During installation of the horizontal wells, breaks in the well screen occurred. These breaks were repaired at that time and installation continued as planned.

LIST OF TABLES

TABLE 1 – Monitoring Well Construction and Elevation Data

TABLE 2 – Groundwater Results Post Remedial Action

TABLE 3 – Vapor Intrusion Results Post Remedial Action

TABLE 4 – Soil Results Pre Remedial Action

Table 1
MONITORING WELL CONSTRUCTION AND GROUNDWATER ELEVATION SUMMARY
 Cornwall Plaza - C336070
 Quaker Avenue, Cornwall, New York

Well ID	Screen Interval (feet)	TOC Elevation (feet msl)	Aug 2015 Survey		Date	Depth to Water (feet bgs)	Depth to Bottom (feet bgs)	Ground Water Elevation (feet msl)
			TOC Elevation (feet msl)	Rim Elevation (feet msl)				
MW-1B	18.0-35.0	49.79	49.150	49.395	2/20/2014	5.80	34.80	43.99
					6/30/2014	5.85	34.54	43.94
					11/24/2014	6.50	34.59	43.29
					2/1/2015	---	---	---
					4/24/2015	4.30	34.59	45.49
MW-1R	10.0-20.0	49.69	49.044	49.455	2/20/2014	4.60	19.10	45.09
					6/30/2014	5.50	19.11	44.19
					11/24/2014	5.40	19.14	44.29
					2/1/2015	---	---	---
					4/24/2015	3.70	19.14	45.99
MW-2R	10.0-20.0	(1)	47.785	48.283	4/24/2015	10.90	20.00	36.89
MW-3	16.0-21.0	48.22	48.010	48.338	2/20/2014	10.40	20.10	37.82
					6/30/2014	12.17	20.12	36.05
					11/24/2014	11.85	20.05	36.37
					2/1/2015	11.41	20.05	8.64
					4/24/2015	10.20	20.05	38.02
MW-3B	27.0-37.0	48.27	48.055	48.231	2/20/2014	11.20	36.00	37.07
					6/30/2014	11.19	36.00	37.08
					11/24/2014	11.71	36.20	36.56
					2/1/2015	11.46	36.30	36.81
					4/24/2015	10.57	36.20	37.70
MW-4	10.0-20.0	48.48			2/20/2014	11.40	28.00	37.08
MW-4R	10.0-12.0	(1)	48.412	48.759	4/24/2015	10.36	20.00	38.05
MW-5	10.0-20.0	49.92	49.386	49.628	2/20/2014	0.00	19.31	49.92
					6/30/2014	5.58	19.31	44.34
					11/24/2014	0.00	19.31	49.92
					2/1/2015	10.17	19.40	39.75
					4/24/2015	5.70	19.31	44.22
MW-6	6.0-16.0	47.20	47.232	47.452	2/20/2014	---	---	---
					6/30/2014	10.16	15.56	37.04
					11/24/2014	11.60	15.60	35.60
					2/1/2015	11.58	15.62	35.62
					4/24/2015	10.51	15.60	36.69
MW-6B	25.0-45.0	46.80	46.896	47.310	2/20/2014	---	---	---
					6/30/2014	10.53	29.92	36.27
					11/24/2014	---	---	---
					2/1/2015	10.87	30.05	35.93
					4/24/2015	---	---	---
MW-7	10.0-20.0	47.29	47.290	47.656	2/20/2014	11.20	19.60	36.09
					6/30/2014	11.17	19.71	36.12
					11/24/2014	11.92	19.71	35.37
					2/1/2015	11.42	19.79	35.87
					4/24/2015	10.58	19.71	36.71
MW-8	10.0-20.0	48.24	48.967	48.258	2/20/2014	---	---	---
					6/30/2014	11.41	18.84	36.83
					11/24/2014	12.29	18.95	35.95
					2/1/2015	11.65	18.85	36.59
					4/24/2015	10.89	18.95	37.35
MW-9	9.0-19.0	47.98	47.677	48.306	2/20/2014	---	---	---
					6/30/2014	10.76	16.71	37.22
					11/24/2014	11.61	16.75	36.37
					2/1/2015	---	---	---
					4/24/2015	10.18	16.75	37.80
MW-10	10.0-20.0	45.75	45.511	45.960	2/20/2014	---	---	---
MW-11	5.5-15.5	44.23	44.166	44.514	2/20/2014	7.50	11.20	36.73
MW-11B	22.0-37.0	44.25	44.388	44.535	2/20/2014	6.00	39.80	38.25
MW-12	5.0-15.0	44.62	44.018	44.236	2/20/2014	9.20	14.60	35.42
MW-12B	20.0-40.0	44.40	43.887	44.120	2/20/2014	5.50	34.25	38.90
MW-13	5.0-20.0	47.68	47.415	47.654	2/20/2014	10.70	19.50	36.98

NOTES:

feet bgs Feet below ground surface

feet msl Feet above mean sea level

--- Inaccessible, abandoned, destroyed, or fouled well

NG Well not gauged

NI Well not installed

NA = not available

(1) = Well installed by VERTEX on April 13, 2015

Damaged and Abandoned Wells = MW-2, MW-2B, MW-4

Table 2
Ground Water Analytical Results
Cornwall Plaza - C336070
Quaker Avenue, Cornwall, New York

Well ID	Sampling Date	GROUNDWATER STANDARDS		Units	MW-1R					MW-1B					MW-2B			MW-2R					MW-3					MW-3B				
		CasNum	AWQS		10-20 feet bgs					18-35 feet bgs					15-20 feet bgs			27-42 feet bgs			16-21 feet bgs					Active						
					Active					Fouled					Active			Fouled			Active					Active						
Volatile Organics by GC/MS																																
Methylene chloride	75-09-2	5	5	ug/l	ND (5.0)	ND (7)	ND (0.7)	ND	ND	ND (5.0)	ND (0.7)	ND (100)	ND (5.0)	ND	ND	ND (250)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (5.0)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (5.0)	ND (7)	ND (0.7)	ND (2.5)		
1,1-Dichloroethane	75-34-3	5	5	ug/l	ND (0.75)	ND (7)	ND (0.7)	ND	ND	ND (0.75)	ND (0.7)	ND (15)	ND (0.75)	ND	ND	ND (38)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (0.75)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (0.75)	ND (7)	ND (0.7)	ND (2.5)		
Chloroform	67-66-3	7	7	ug/l	ND (0.75)	ND (7)	ND (0.7)	ND	ND	ND (0.75)	ND (0.7)	ND (15)	ND (0.75)	ND	ND	ND (38)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (0.75)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (0.75)	ND (7)	ND (0.7)	ND (2.5)		
Carbon tetrachloride	56-23-5	5	5	ug/l	ND (0.5)	ND (13)	ND (0.13)	ND	ND	ND (0.5)	ND (0.13)	ND (10)	ND (0.5)	ND	ND	ND (25)	ND (1.3)	ND (0.13)	ND (0.13)	ND (0.5)	ND	ND (0.5)	ND (1.3)	ND (0.13)	ND (0.5)	ND	ND (0.5)	ND (1.3)	ND (0.13)	ND (0.5)		
1,2-Dichloropropane	78-87-5	1	1	ug/l	NR	ND (1.3)	ND (0.13)	ND	ND	NR	ND (0.13)	NR	NR	ND	ND	NR	ND (1.3)	ND (0.13)	ND (0.13)	ND (1)	ND	NR	ND (1.3)	ND (0.13)	ND (1)	ND	NR	ND (1.5)	ND (0.15)	ND (0.5)		
Dibromo-chloromethane	124-48-1	50	50	ug/l	NR	ND (1.5)	ND (0.15)	ND	ND	NR	ND (0.15)	NR	NR	ND	ND	NR	ND (1.5)	ND (0.15)	ND (0.15)	ND (0.5)	ND	NR	ND (1.5)	ND (0.15)	ND (0.5)	ND	NR	ND (1.5)	ND (0.15)	ND (0.5)		
1,1,2-Trichloroethane	79-00-5	1	1	ug/l	ND (0.75)	ND (5)	ND (0.5)	ND (0.5)	ND	ND (0.75)	ND (0.5)	ND (15)	ND (0.75)	ND	ND	ND (38)	ND (5)	ND (0.5)	ND (0.5)	ND (1.5)	ND	ND (0.75)	ND (5)	ND (0.5)	ND (1.5)	ND	ND (0.75)	ND (5)	ND (0.5)	ND (1.5)		
Tetrachloroethene	127-18-4	5	5	ug/l	ND (0.5)	ND (1.8)	ND (0.18)	ND	ND	ND (0.5)	ND (0.18)	1,000	ND (0.5)	13	0.66	1,600	460	21	28	72	740	ND (0.5)	ND (1.8)	ND (0.18)	ND (0.5)	ND	NR	ND (1.8)	ND (0.18)	ND (0.5)		
Chlorobenzene	108-90-7	5	5	ug/l	ND (0.5)	ND (7)	ND (0.7)	ND	ND	ND (0.5)	ND (0.7)	ND (10)	ND (0.5)	ND	ND	ND (25)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (0.5)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (0.5)	ND (7)	ND (0.7)	ND (2.5)		
Trichlorofluoromethane	75-69-4	5	-	ug/l	ND (2.5)	ND (7)	ND (0.7)	ND	ND	ND (2.5)	ND (0.7)	ND (50)	ND (2.5)	ND	ND	ND (120)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (2.5)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (2.5)	ND (7)	ND (0.7)	ND (2.5)		
1,2-Dichloroethane	107-06-2	0.6	0.6	ug/l	ND (0.5)	ND (7)	ND (0.13)	ND	ND	ND (0.5)	ND (0.13)	ND (10)	ND (0.5)	ND	ND	ND (25)	ND (7)	ND (0.13)	ND (0.13)	ND (0.5)	ND	ND (0.5)	ND (1.3)	ND (0.13)	ND (0.5)	ND	ND (0.5)	ND (1.3)	ND (0.13)	ND (0.5)		
1,1,1-Trichloroethane	71-55-6	5	5	ug/l	ND (0.5)	ND (1.3)	ND (0.7)	ND	ND	ND (0.5)	ND (0.7)	ND (10)	ND (0.5)	ND	ND	ND (25)	ND (1.3)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (0.5)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (0.5)	ND (7)	ND (0.7)	ND (2.5)		
Bromodichloromethane	75-27-4	50	50	ug/l	NR	ND (1.3)	ND (0.19)	ND	ND	NR	ND (0.19)	NR	NR	ND	ND	NR	ND (1.3)	ND (0.19)	ND (0.19)	ND (0.5)	ND	NR	ND (1.9)	ND (0.19)	ND (0.5)	ND	NR	ND (1.9)	ND (0.19)	ND (0.5)		
trans-1,3-Dichloropropene	10061-02-6	0.4	0.4	ug/l	NR	ND (1.5)	ND (0.16)	ND	ND	NR	ND (0.16)	NR	NR	ND	ND	NR	ND (1.5)	ND (0.16)	ND (0.16)	ND (0.5)	ND	NR	ND (1.6)	ND (0.16)	ND (0.5)	ND	NR	ND (1.6)	ND (0.16)	ND (0.5)		
cis-1,3-Dichloropropene	10061-01-5	0.4	0.4	ug/l	NR	ND (5)	ND (0.14)	ND	ND	NR	ND (0.14)	NR	NR	ND	ND	NR	ND (5)	ND (0.14)	ND (0.14)	ND (0.5)	ND	NR	ND (1.4)	ND (0.14)	ND (0.5)	ND	NR	ND (1.4)	ND (0.14)	ND (0.5)		
1,3-Dichloropropene, Total	542-75-6	NA	NA	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloropropene	563-58-6	5	5	ug/l	NR	ND (7)	ND (0.7)	ND	ND	NR	ND (0.7)	NR	NR	ND	ND	NR	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	NR	ND (7)	ND (0.7)	ND (2.5)	ND	NR	ND (7)	ND (0.7)	ND (2.5)		
Bromoform	75-25-2	50	50	ug/l	NR	ND (6.5)	ND (0.65)	ND	ND	NR	ND (0.65)	NR	NR	ND	ND	NR	ND (6.5)	ND (0.65)	ND (0.65)	ND (2)	ND	NR	ND (6.5)	ND (0.65)	ND (2)	ND	NR	ND (6.5)	ND (0.65)	ND (2)		
1,1,2,2-Tetrachloroethane	79-34-5	5	5	ug/l	NR	ND (1.4)	ND (0.14)	ND	ND	NR	ND (0.14)	NR	NR	ND	ND	NR	ND (1.4)	ND (0.14)	ND (0.14)	ND (0.5)	ND	NR	ND (1.4)	ND (0.14)	ND (0.5)	ND	NR	ND (1.4)	ND (0.14)	ND (0.5)		
Benzene	71-43-2	1	1	ug/l	ND (0.5)	2.4 J	ND (0.16)	ND	ND	ND (0.5)	ND (0.16)	ND (10)	ND (0.5)	ND	ND	ND (25)	ND (1.6)	ND (0.16)	ND (0.16)	ND (0.5)	ND	ND (0.5)	ND (1.6)	ND (0.16)	ND (0.5)	ND	NR	ND (1.4)	ND (0.16)	ND (0.5)		
Toluene	108-88-3	5	5	ug/l	ND (0.75)	ND (7)	ND (0.7)	ND	ND	ND (0.75)	ND (0.7)	ND (15)	ND (0.75)	ND	ND	ND (38)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (0.75)	ND (7)	ND (0.7)	ND (2.5)	ND	ND (0.75)	ND (7)	ND (0.7)	ND (2.5)		
Ethylbenzene	100-41-4	5	5	ug/l	ND (0.5)	ND (7)	ND (0.7)	ND	ND	ND (0.5)	ND (0.7)	ND (10)	ND (0.5)	ND	ND	ND (25)	ND (7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	ND (0.5)	ND (7)	ND (0.7)	ND (

Table 2
Ground Water Analytical Results
Cornwall Plaza - C336070
Quaker Avenue, Cornwall, New York

Well ID	Sampling Date	CasNum	GROUNDWATER STANDARDS		Units	MW-4		MW-4R		MW-5		MW-6		MW-6B		MW-7		MW-8			
			AWQS	NY-TOGS-GA		10-20 feet bgs		10-20 feet bgs		6-16 feet bgs		25-45 feet bgs		10-20 feet bgs		Active		Active			
						Fouled	Active	Active	NR	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)		
Volatile Organics by GC/MS																					
Methylene chloride	75-09-2	5	5	ug/l	ND (50)	ND	ND	ND (5.0)	ND (0.7)	ND (2.5)	ND (50)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (5.0)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
1,1-Dichloroethane	75-34-3	5	5	ug/l	ND (7.5)	ND	ND	ND (0.75)	ND (0.7)	ND (2.5)	ND (5.0)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.75)	ND (0.7)	ND (2.5)	ND		
Chloroform	67-66-3	7	7	ug/l	ND (0.75)	ND	ND	ND (0.75)	ND (0.7)	ND (2.5)	ND (7.5)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.75)	ND (0.7)	ND (2.5)	ND		
Carbon tetrachloride	56-23-5	5	5	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.3)	ND (0.5)	ND (5.0)	ND (0.13)	ND (0.34)	ND (0.5)	ND	ND (0.5)	ND (0.13)	ND (0.13)	ND (0.5)	ND	
1,2-Dichloropropane	78-87-5	1	1	ug/l	NR	ND	ND	NR	ND (0.13)	ND (1)	NR	ND (0.13)	ND (0.33)	ND (1)	ND	NR	ND (0.13)	ND (0.13)	ND (1)	ND	
Dibromoethane	124-48-1	50	50	ug/l	NR	ND	ND	NR	ND (0.15)	ND (0.5)	NR	ND (0.15)	ND (0.37)	ND (0.5)	ND	NR	ND (0.15)	ND (0.15)	ND (0.5)	ND	
1,1,2-Trichloroethane	79-00-5	1	1	ug/l	ND (7.5)	ND	ND	ND (0.75)	ND (0.5)	ND (1.5)	ND (7.5)	ND (0.5)	ND (1.2)	ND (1.5)	ND	ND (0.75)	ND (0.5)	ND (0.5)	ND (1.5)	ND	
Tetrachloroethene	127-18-4	5	5	ug/l	320	300	260	ND (5.0)	ND (0.18)	16	1.6	2.5	0.2 J	ND	ND (0.5)	18	19	15	23	22	
Chlorobenzene	108-90-7	5	5	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.7)	ND (2.5)	ND (5.0)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Trichlorofluoromethane	75-69-4	5	-	ug/l	ND (25)	ND	ND	ND (2.5)	ND (0.7)	ND (2.5)	ND (25)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (2.5)	ND (0.7)	ND (2.5)	ND		
1,2-Dichloroethane	107-06-2	0.6	0.6	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.13)	ND (0.5)	ND (5.0)	ND (0.13)	ND (0.33)	ND (0.5)	ND	ND (0.5)	ND (0.13)	ND (0.13)	ND (0.5)	ND	
1,1,1-Trichloroethane	71-55-6	5	5	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.7)	ND (2.5)	ND (5.0)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Bromodichloromethane	75-27-4	50	50	ug/l	NR	ND	ND	NR	ND (0.19)	ND (0.5)	NR	ND (0.19)	ND (0.48)	ND (0.5)	ND	NR	ND (0.19)	ND (0.19)	ND (0.5)	ND	
trans-1,3-Dichloropropene	10061-02-6	0.4	0.4	ug/l	NR	ND	ND	NR	ND (0.16)	ND (0.5)	NR	ND (0.16)	ND (0.41)	ND (0.5)	ND	NR	ND (0.16)	ND (0.16)	ND (0.5)	ND	
cis-1,3-Dichloropropene	10061-01-5	0.4	0.4	ug/l	NR	ND	ND	NR	ND (0.14)	ND (0.5)	NR	ND (0.14)	ND (0.36)	ND (0.5)	ND	NR	ND (0.14)	ND (0.14)	ND (0.5)	ND	
1,3-Dichloropropene, Total	542-75-6	NA	NA	ug/l	-	-	-	-	-	-	ND	-	-	-	-	-	-	-	-	ND	
1,1,1-Dichloropropane	563-58-6	5	5	ug/l	NR	ND	ND	NR	ND (0.7)	ND (2.5)	NR	ND (0.7)	ND (1.8)	ND (2.5)	ND	NR	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Bromoform	75-25-2	50	50	ug/l	NR	ND	ND	NR	ND (0.65)	ND (2)	NR	ND (0.65)	ND (1.6)	ND (2)	ND	NR	ND (0.65)	ND (0.65)	ND (2)	ND	
1,1,2,2-Tetrachloroethane	79-34-5	5	5	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.14)	ND (0.5)	NR	ND (0.14)	ND (0.36)	ND (0.5)	ND	NR	ND (0.14)	ND (0.14)	ND (0.5)	ND	
Benzene	71-43-2	1	1	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.14)	ND (0.5)	ND (5.0)	ND (0.16)	ND (0.4)	ND (0.5)	ND	ND (0.5)	ND (0.16)	ND (0.16)	ND (0.5)	ND	
Toluene	108-88-3	5	5	ug/l	ND (7.5)	ND	ND	ND (0.5)	ND (0.7)	ND (2.5)	ND (7.5)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Ethylbenzene	100-41-4	5	5	ug/l	ND (5.0)	ND	ND	ND (0.5)	ND (0.7)	ND (2.5)	ND (5.0)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Chloromethane	74-87-3	-	-	ug/l	ND (25)	ND	ND	ND (2.5)	ND (0.7)	ND (2.5)	ND (25)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.7)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Bromomethane	74-83-9	5	5	ug/l	NR	ND	ND	NR	ND (0.7)	ND (2.5)	NR	ND (0.7)	ND (1.8)	ND (2.5)	ND	NR	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Vinyl chloride	75-01-4	2	2	ug/l	11	8.7	9.9	ND (1.0)	ND (0.33)	ND (1)	87	1.7	43	3	ND	ND (1.0)	ND (0.33)	ND (1)	ND (1.0)	1.9	
Chloroethane	75-00-3	5	5	ug/l	ND (10)	ND	ND	ND (0.7)	ND (2.5)	ND (10)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (1.0)	ND (0.7)	ND (0.7)	ND (2.5)	ND		
1,1-Dichloroethane	75-35-4	5	5	ug/l	ND (5)	ND	ND	ND (0.5)	ND (0.14)	ND (0.5)	ND (5.0)	ND (0.14)	ND (0.36)	ND (0.5)	ND	ND (0.5)	ND (0.14)	ND (0.14)	ND (0.5)	ND	
trans-1,2-Dichloroethene	156-60-5	5	5	ug/l	ND (7.5)	3.3J	4.8	ND (0.75)	ND (0.7)	ND (2.5)	ND (7.5)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (0.75)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Trichloroethene	79-01-6	5	5	ug/l	120	50	37	ND (0.5)	ND (0.17)	ND (0.5)	1.8	4.6	ND (0.5)	0.95	ND (0.5)	1	1.1	0.72	0.79	1.1	2.9
1,2-Dichlorobenzene	95-50-1	3	3	ug/l	NR	ND	ND	NR	ND (0.7)	ND (2.5)	NR	ND (0.7)	ND (1.8)	ND (2.5)	ND	NR	ND (0.7)	ND (0.7)	ND (2.5)	ND	
1,3-Dichlorobenzene	541-73-1	3	3	ug/l	NR	ND	ND	NR	ND (0.7)	ND (2.5)	NR	ND (0.7)	ND (1.8)	ND (2.5)	ND	NR	ND (0.7)	ND (0.7)	ND (2.5)	ND	
1,4-Dichlorobenzene	106-46-7	3	3	ug/l	NR	ND	ND	NR	ND (0.7)	ND (2.5)	NR	ND (0.7)	ND (1.8)	ND (2.5)	ND	NR	ND (0.7)	ND (0.7)	ND (2.5)	ND	
Methyl tert butyl ether	1634-04-4	10	10	ug/l	ND (10)	ND	ND	3.6	ND (0.7)	ND (2.5)	ND (10)	ND (0.7)	ND (1.8)	ND (2.5)	ND	ND (1.0)	ND (0.7)	ND (0.7)	ND (2.5)	ND	
p/m-Xylene	179601-23-1	5	5	ug/l																	

Table 2
Ground Water Analytical Results

Cornwall Plaza - C336070
Quaker Avenue, Cornwall, New York

Well ID	Sampling Date	GROUNDWATER STANDARDS		Units	MW-9		MW-10		MW-11		MW-11B		MW-12		MW-12B		MW-13		FIELD BLANK		TRIP BLANK								
		CasNum	AWQS		3/22/2011	7/1/2014	2/19/2015	3/22/2011	2/20/2014	3/22/2011	2/20/2014	3/22/2011	2/20/2014	3/22/2011	2/20/2014	3/22/2011	2/19/2014	6/30/2014	7/1/2014	11/24/2014	2/19/2015	7/1/2014	11/24/2014	2/17/2015					
					Arcadis	L1403838-01	L1403838-01	L1414661-13	L1428576-06	L1414661-13	L1428576-07	L1503206-05																	
Screened Interval																													
Well Status																													
Volatile Organics by GC/MS																													
Methylene chloride	75-09-2	5	5	ug/l	ND (5.0)	ND (0.7)	ND (2.5)	ND (5.0)	ND (0.7)	ND (5.0)	ND (0.7)	ND (2.5)	ND (0.7)	ND (0.7)	ND (2.5)														
1,1-Dichloroethane	75-34-3	5	5	ug/l	ND (0.75)	ND (0.7)	ND (2.5)	ND (0.75)	ND (0.7)	ND (0.75)	ND (0.7)	ND (2.5)	ND (0.7)	ND (0.7)	ND (2.5)														
Chloroform	67-66-3	7	7	ug/l	ND (0.75)	ND (0.7)	ND (2.5)	ND (0.75)	ND (0.7)	ND (0.75)	ND (0.7)	ND (2.5)	ND (0.7)	ND (0.7)	ND (2.5)														
Carbon tetrachloride	56-23-5	5	5	ug/l	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)						
1,2-Dichloropropane	78-87-5	1	1	ug/l	NR	ND (0.13)	ND (1)	NR	ND (0.13)	NR	ND (0.13)	ND (1)																	
Dibromochloromethane	124-48-1	50	50	ug/l	NR	ND (0.15)	ND (0.5)	NR	ND (0.15)	NR	ND (0.15)																		
1,1,2-Trichloroethane	79-00-5	1	1	ug/l	ND (0.75)	ND (0.5)	ND (1.5)	ND (0.75)	ND (0.5)	ND (0.75)	ND (0.5)	ND (1.5)																	
Tetrachloroethene	127-18-4	5	5	ug/l	ND (0.5)	ND (0.18)	49	27	ND (0.75)	ND (0.5)	ND (0.5)	ND (0.75)	ND (0.5)	ND (0.5)	ND (0.75)	ND (0.5)	ND (0.75)	ND (0.5)	ND (0.75)	ND (0.5)	ND (0.18)	ND (0.18)	ND (0.18)	ND (0.18)	ND (0.18)				
Chlorobenzene	108-90-7	5	5	ug/l	ND (0.5)	ND (0.7)	ND (2.5)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND (0.7)	ND (0.7)	ND (2.5)					
Trichlorofluoromethane	75-69-4	5	-	ug/l	ND (2.5)	ND (0.7)	ND (2.5)	ND (2.5)	ND (0.7)	ND (2.5)	ND (0.7)	ND (2.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND (0.7)													
1,2-Dichloroethane	107-06-2	0.6	0.6	ug/l	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.13)	ND (0.5)	ND (0.5)					
1,1,1-Trichloroethane	71-55-6	5	5	ug/l	ND (0.5)	ND (0.7)	ND (2.5)	ND (0.5)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.5)	ND (0.7)	ND (0.5)	ND (0.5)	ND (0.7)	ND (0.7)	ND (2.5)	ND (0.7)	ND (0.7)	ND (2.5)					
Bromodichloromethane	75-27-4	50	50	ug/l	NR	ND (0.19)	NR	NR	ND (0.19)	NR	ND (0.19)	ND (0.19)																	
trans-1,3-Dichloropropene	10061-02-6	0.4	0.4	ug/l	NR	ND (0.16)	ND (0.5)	NR	NR	ND (0.16)	NR	ND (0.16)	NR	NR	ND (0.16)	NR	ND (0.16)	NR	ND (0.16)	ND (0.16)									
cis-1,3-Dichloropropene	10061-01-5	0.4	0.4	ug/l	NR	ND (0.14)	ND (0.5)	NR	NR	ND (0.14)	NR	ND (0.14)	NR	NR	ND (0.14)	NR	ND (0.14)	NR	ND (0.14)	ND (0.14)									
1,3-Dichloropropene, Total	542-75-6	NA	NA	ug/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1,1-Dichloropropene	563-58-6	5	5	ug/l	NR	ND (0.7)	ND (2.5)	NR	NR	ND (0.7)																			
Bromofrom	75-25-2	50	50	ug/l	NR	ND (0.65)	ND (2)	NR	NR	ND (0.65)	NR	ND (0.65)	NR	NR	ND (0.65)	NR	ND (0.65)	NR	ND (0.65)										
1,1,2,2-Tetrachloroethane	79-34-5	5	5	ug/l	NR	ND (0.14)	ND (0.5)	NR	NR	ND (0.14)	NR	ND (0.14)	NR	NR	ND (0.14)	NR	ND (0.14)	NR	ND (0.14)										
Benzene	71-43-2	1	1	ug/l	ND (0.5)	ND (0.16)	ND (0.5)	ND (0.5)	ND (0.16)	ND (0.5)	ND (0.5)	ND (0.16)	ND (0.5)	ND (0.5)	ND (0.16)	ND (0.5)	ND (0.5)	ND (0.16)											
Toluene	108-88-3	5	5	ug/l	ND (0.5)	ND (0.7)	ND (2.5)	ND (0.5)	ND (0.7)	ND (2.5)	ND (0.5)	ND (0.7)																	
Ethylbenzene	100-41-4	5	5	ug/l	ND (0.5)	ND (0.7)	ND (2.5)	ND (0.5)	ND (0.7)	ND (2.5)	ND (0.5)	ND (0.7)	ND (0.																

Table 3
Summary of Sub-Slab Soil Gas and Indoor Air Sampling Results- September 2015
Cornwall Plaza - C336070
Quaker Avenue, Cornwall, New York

LOCATION	CasNum	NY Sub Slab Criteria	NY Indoor Air Criteria	CSS-1	CIA-1	CSS-2	CIA-2	KFSS-1	KFIA-1	AMBIENT
				9/11/2015	9/11/2015	9/11/2015	9/11/2015	9/11/2015	9/11/2015	9/11/2015
				L1522577-05	L1522577-01	L1522577-06	L1522577-02	L1522577-07	L1522577-03	L1522577-04
Volatile Organics in Air - Mansfield Lab										
1,1,1-Trichloroethane	71-55-6	100	3	1.09	U	-	10.9	U	-	1.09
1,1,2-Tetrachloroethane	79-34-5	NS	NS	1.37	U	1.37	U	1.37	U	1.37
1,1,2-Trichloroethane	79-00-5	NS	NS	1.09	U	1.09	U	1.09	U	1.09
1,1-Dichloroethane	75-34-3	NS	NS	0.809	U	0.809	U	0.809	U	0.809
1,1-Dichloroethene	75-35-4	NS	NS	0.793	U	-	7.93	U	-	0.793
1,2,4-Trichlorobenzene	120-82-1	NS	NS	1.48	U	1.48	U	1.48	U	1.48
1,2,4-Trimethylbenzene	95-63-6	NS	NS	0.983	U	0.983	U	0.983	U	0.983
1,2-Dibromoethane	106-93-4	NS	NS	1.54	U	1.54	U	1.54	U	1.54
1,2-Dichlorobenzene	95-50-1	NS	NS	1.2	U	1.2	U	1.2	U	1.2
1,2-Dichloroethane	107-06-2	NS	NS	0.809	U	0.809	U	0.809	U	0.809
1,2-Dichloropropane	78-87-5	NS	NS	0.924	U	0.924	U	0.924	U	0.924
1,3,5-Trimethylbenzene	108-67-8	NS	NS	0.983	U	0.983	U	0.983	U	0.983
1,3-Butadiene	106-99-0	NS	NS	0.442	U	0.442	U	0.442	U	0.442
1,3-Dichlorobenzene	541-73-1	NS	NS	1.2	U	1.2	U	1.2	U	1.2
1,4-Dichlorobenzene	106-46-7	NS	NS	1.2	U	1.2	U	1.2	U	1.2
1,4-Dioxane	123-91-1	NS	NS	0.721	U	0.721	U	0.721	U	0.721
2,2,4-Trimethylpentane	540-84-1	NS	NS	0.934	U	0.934	U	0.934	U	0.934
2-Butanone	78-93-3	NS	NS	1.47	U	1.47	U	1.47	U	1.47
2-Hexanone	591-78-6	NS	NS	0.82	U	0.82	U	0.82	U	0.82
3-Chloropropene	107-05-1	NS	NS	0.626	U	0.626	U	0.626	U	0.626
4-Ethyltoluene	622-96-8	NS	NS	0.983	U	0.983	U	0.983	U	0.983
4-Methyl-2-pentanone	108-10-1	NS	NS	2.05	U	2.05	U	2.05	U	2.05
Acetone	67-64-1	NS	NS	17.1		6.06	25.2	49.4		52
Benzene	71-43-2	NS	NS	0.639	U	0.639	U	0.639	U	0.639
Benzyl chloride	100-44-7	NS	NS	1.04	U	1.04	U	1.04	U	1.04
Bromodichloromethane	75-27-4	NS	NS	1.34	U	1.34	U	1.34	U	1.34
Bromoform	75-25-2	NS	NS	2.07	U	2.07	U	2.07	U	2.07
Bromomethane	74-83-9	NS	NS	0.777	U	0.777	U	0.777	U	0.777
Carbon disulfide	75-15-0	NS	NS	0.623	U	0.623	U	0.623	U	0.623
Carbon tetrachloride	56-23-5	5	0.25	1.26	U	-	12.6	U	-	1.26
Chlorobenzene	108-90-7	NS	NS	0.921	U	0.921	U	0.921	U	0.921
Chloroethane	75-00-3	NS	NS	0.528	U	0.528	U	0.528	U	0.528
Chloroform	67-66-3	NS	NS	0.977	U	0.977	U	0.977	U	0.977
Chloromethane	74-87-3	NS	NS	0.413	U	0.923	U	4.13	U	1.03
cis-1,2-Dichloroethene	156-59-2	NS	NS	0.793	U	-	7.93	U	-	0.793
cis-1,3-Dichloropropene	10061-01-5	NS	NS	0.908	U	0.908	U	0.908	U	0.908
Cyclohexane	110-82-7	NS	NS	0.688	U	0.688	U	0.688	U	0.688
Dibromochloromethane	124-48-1	NS	NS	1.7	U	1.7	U	1.7	U	1.7
Dichlorodifluoromethane	75-71-8	NS	NS	1.51		1.34	9.89	U	1.14	1.54
Ethanol	64-17-5	NS	NS	4.71	U	26.6	47.1	U	129	18.8
Ethyl Acetate	141-78-6	NS	NS	1.8	U	1.8	U	1.8	U	38.2
Ethylbenzene	100-41-4	NS	NS	0.869	U	0.869	U	3.61	U	0.869
Freon-113	76-13-1	NS	NS	1.53	U	1.53	U	1.53	U	1.53
Freon-114	76-14-2	NS	NS	1.4	U	1.4	U	14	U	1.4
Heptane	142-82-5	NS	NS	0.82	U	0.82	U	8.2	U	0.82
Hexachlorobutadiene	87-68-3	NS	NS	2.13	U	2.13	U	21.3	U	2.13
Isopropanol	67-63-0	NS	NS	9.17		1.23	U	12.6	U	1.23
Methyl tert butyl ether	1634-04-4	NS	NS	0.721	U	0.721	U	7.21	U	0.721
Methylene chloride	75-09-2	NS	60	1.74	U	1.91	17.4	U	31.4	1.74
n-Hexane	110-54-3	NS	NS	0.705	U	0.705	U	7.05	U	0.705
o-Xylene	95-47-6	NS	NS	0.869	U	0.869	U	8.69	U	6.12
p/m-Xylene	179601-23-1	NS	NS	1.74	U	1.74	U	17.4	U	15.3
Styrene	100-42-5	NS	NS	0.852	U	0.852	U	8.52	U	0.852
Tertiary butyl Alcohol	75-65-0	NS	NS	1.52	U	1.52	U	15.2	U	1.52
Tetrachloroethene	127-18-4	30	3	113		-	3700		-	183
Tetrahydrofuran	109-99-9	NS	NS	1.47	U	1.47	U	14.7	U	1.47
Toluene	108-88-3	NS	NS	0.754	U	0.754	U	7.54	U	8.97
trans-1,2-Dichloroethene	156-60-5	NS	NS	0.793	U	0.793	U	7.93	U	0.793
trans-1,3-Dichloropropene	10061-02-6	NS	NS	0.908	U	0.908	U	9.08	U	0.908
Trichloroethene	79-01-6	5	0.25	1.27		-	303		-	2.79
Trichlorofluoromethane	75-69-4	NS	NS	1.12	U	1.12	U	11.2	U	1.17
Vinyl bromide	593-60-2	NS	NS	0.874	U	0.874	U	8.74	U	0.874
Vinyl chloride	75-01-4	NS	NS	0.511	U	-	5.11	U	-	0.511
Volatile Organics in Air by SIM - Mansfield Lab										
1,1,1-Trichloroethane	71-55-6	100	3	-	-	0.109	U	-	-	0.109
1,1-Dichloroethene	75-35-4	NS	NS	-	-	0.079	U	-	-	0.079
Carbon tetrachloride	56-23-5	5	0.25	-	-	0.39		-	-	0.579
cis-1,2-Dichloroethene	156-59-2	NS	NS	-	-	0.079	U	-	-	0.079
Tetrachloroethene	127-18-4	30	3	-	-	0.136	U	-	-	260
Trichloroethene	79-01-6	5	0.25	-	-	0.107	U	-	-	0.107
Vinyl chloride	75-01-4</td									

Table 4
NYSDOH Matrix Comparsion
Cornwall Plaza - C336070
Quaker Avenue, Cornwall, NY

NYSDOH Decision Matrix	Sample Location	Chan's				Key Foods	
	Sample ID	CSS-1	CIA-1	CSS-2	CIA-2	KFSS-1	KFIA-1
	Type of Sample	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air
Matrix 1	Carbon Tetrachloride	ND	0.39	ND	0.39	ND	0.579
		Conclusion: ID sources and reduce exposure		Conclusion: ID sources and reduce exposure		Conclusion: ID sources and reduce exposure	
	Trichloroethene	1.27	ND	303	ND	2.79	ND
		Conclusion: No Further Action		Conclusion: Mitigate		Conclusion: No Further Action	
	Vinyl Chloride	ND	ND	ND	ND	ND	ND
		Conclusion: No Further Action		Conclusion: No Further Action		Conclusion: No Further Action	
Matrix 2	Tetrachloroethene	113	ND	3700	260	183	0.57
		Conclusion: Monitor		Conclusion: Mitigate		Conclusion: Monitor	
	1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND
		Conclusion: No Further Action		Conclusion: No Further Action		Conclusion: No Further Action	
	1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
		Conclusion: No Further Action		Conclusion: No Further Action		Conclusion: No Further Action	
	cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
		Conclusion: No Further Action		Conclusion: No Further Action		Conclusion: No Further Action	

NOTES:

All concentrations are in milligram per cubic meter (ug/m3)

TABLE 5

FORMER CORNWALL CLEANERS
CORNWALL PLAZA
QUAKER AVENUE
CORNWALL, NEW YORK
BCP SITE NO. C336070

Summary of Volatile Organic Compounds Detected in Soil
VOCs by EPA Method 8260 modified to include MTBE
Collected October 25, 2007 and May 6, 2009
(All concentrations expressed in micrograms per kilogram [ug/kg])

Compound	Sample ID												NYSDEC TAGM #4046 RSCO 2)	6 NYCRR Part 375 ³⁾						
	MW-1R		MW-2B		MW-3B		MW-4		MW-5		MW-6		MW-7	MW-8	MW-9	MW-11	MW-12	Unrestricted Use Soil Cleanup Objective	Restricted Use Commercial	Restricted Use Protection of Groundwater
	12-20 ftbg ¹⁾	11-13 ftbg	13-15 ftbg	10-12 ftbg	15-17 ftbg	11-13 ftbg	13-15 ftbg	11-13 ftbg	15-17 ftbg	10-12 ftbg	12-14 ftbg	7-9 ftbg	7-9 ftbg	5-7 ftbg	9-11 ftbg	9-11 ftbg				
Dichlorodifluoromethane	<51	<52	<52	<62	<2.0	<59	<50	<50	<54	<16	<59	<45	<53	<57	<46	<61	NS ⁴⁾	NS	NS	NS
Chloromethane	<51	<52	<52	<62	<50	<59	<50	<52	<54	<56	<59	<45	<53	<57	<46	<61	NS	NS	NS	NS
Vinyl chloride	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	200	20	13,000	20
Chloroethane	<51	<52	<52	<62	<50	<59	<50	<52	<54	<56	<59	<45	<53	<57	<46	<61	1,900	NS	NS	NS
Trichlorofluoromethane	<51	<52	<52	<62	<50	<59	<50	52	54	<56	<59	<45	<53	<57	<46	<61	NS	NS	NS	NS
Acetone	<250	<260	<260	<310	<250	<290	<250	<260	<270	<280	<290	<220	<260	<280	<230	<300	200	50	500,000	50
1,1-Dichloroethene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	400	330	500,000	330
Carbon disulfide	<51	<52	<52	<62	<50	<59	85	<52	<54	<.56	<59	<45	<53	<57	<46	<61	2,700	NS	NS	NS
Methylene chloride	<51	<52	600	270	<50	<59	140	<52	<54	150	620	<45	<53	<57	<46	<61	100	50	500,000	50
Methyl tert-butyl ether (MTBE)	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	22	26	<28	<23	<30	NS	930	500,000	930
trans-1,2-Dichloroethene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	300	190	500,000	190
1,1-Dichloroethane	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	200	270	240,000	270
2-Butanone	<250	<260	<260	<310	<250	<290	<250	<260	<270	<280	<290	<220	<260	<280	<230	<300	300	120	500,000	120
cis-1,2-Dichloroethene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	26	<28	<23	<30	NS	250	500,000	250
Chloroform	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	300	370	350,000	370
1,1,1-Trichloroethane	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	800	680	500,000	680
Carbon tetrachloride	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	28	<23	<30	600	760	22,000	760
1,2-Dichloroethane	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	100	20	30,000	20
Benzene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	60	60	44,000	60
Trichloroethene (TCE)	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	700	470	200,000	470
Toluene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	1,500	700	500,000	700
1,1,2-Trichloroethane	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	NS	NS	NS	NS
Tetrachloroethene (PCE)	<25	<26	170	<31	2,100	620	490	<26	<27	<28	<29	<22	<26	<28	<23	<30	1,400	1,300	150,000	1,300
Chlorobenzene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	1,700	1,100	500,000	1,100
Ethylbenzene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	22	<26	<28	<23	<30	5,500	1,000	390,000	1,000
m,p-Xylene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	1,200	1,200	260 (mixed)	500,000
o-Xylene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	1,200	1,200	1,600	
1,3,5-Trimethylbenzene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	3,300	8,400	190,000	8,400
1,2,4-Trimethylbenzene	<25	<26	<26	<31	<25	<29	<25	<26	<27	<28	<29	<22	<26	<28	<23	<30	10,000	3,600	190,000	3,600

Naphthalene	<51	<52	<52	<62	<50	<59	<50	<52	<54	<56	<59	<45	<53	<57	<46	<61	13,000	12,000	500,000	12,000
-------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	--------	--------	---------	--------

Concentrations in BOLD are above the laboratory detection limit

1) feet below grade

2) New York State Dept. of Env. Con. Technical and Administrative Guidance Memorandum 4046 Recommended Soil Cleanup Objectives, Jan. 24, 1994

3) New York State Codes, Rules and Regulations, Chapter IV, Part 375: Environmental Remediation Programs, Subpart 375-6: Remedial Program Soil Cleanup Objectives, Dec. 14, 2006

LIST OF FIGURES

FIGURE 1 – Site Location Map

FIGURE 2 – Site Plan

FIGURE 3 – Sub-Slab Depressurization System - Engineering Controls

FIGURE 4 – Evo Injection Location Plan

FIGURE 5 – Institutional and Engineering Controls Map

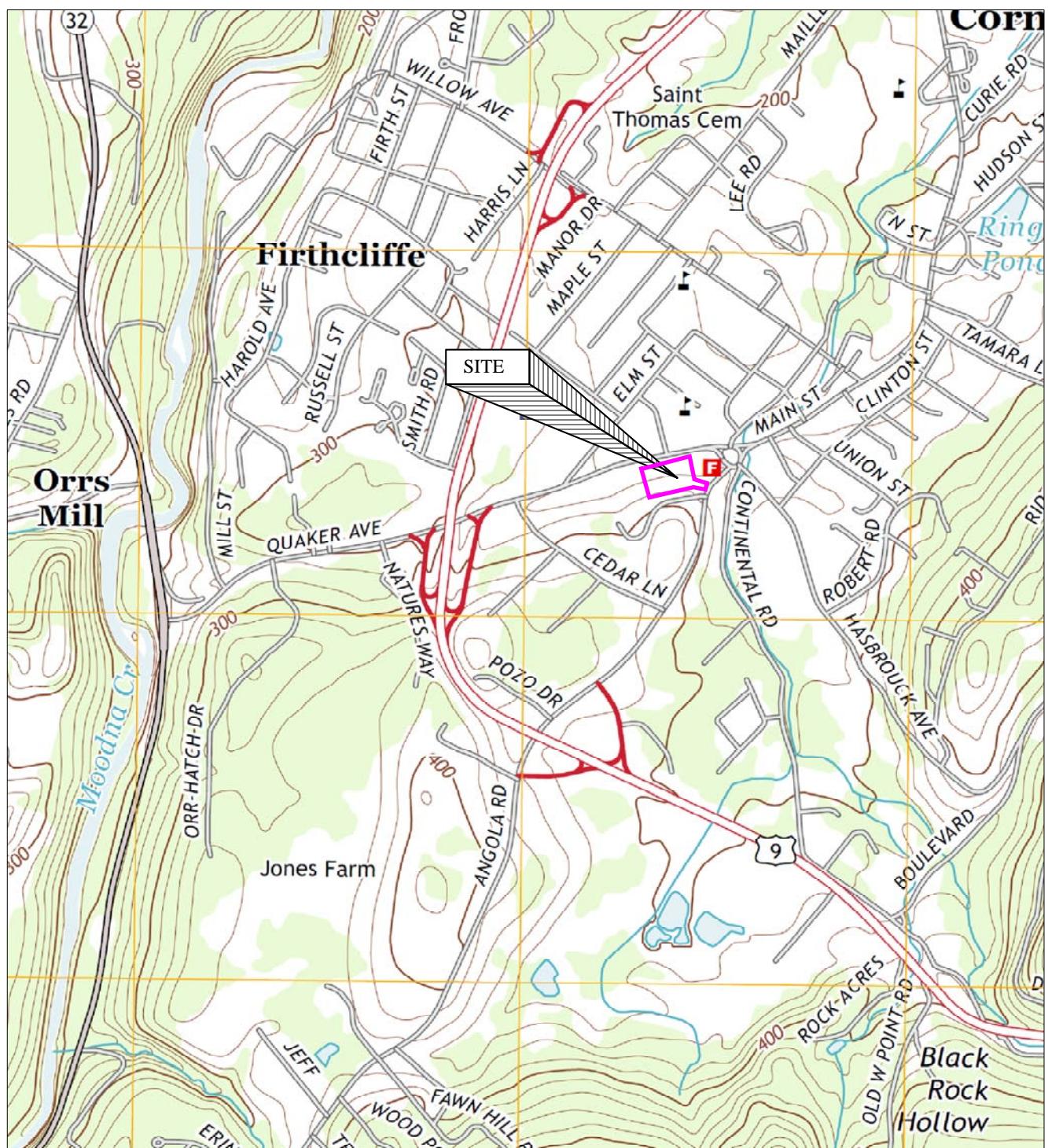
FIGURE 6 – Engineering Controls (Existing)

FIGURE 7 – Waste Origins

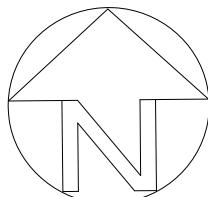
FIGURE 8 – Soil-Vapor and Indoor Air Sampling Locations and Results - Post Remedial Action

FIGURE 9 – Groundwater Exceedances Post Remedial Action

FIGURE 10 – Soil Boring Location Map



USGS Topographic Map, 2013
 Cornwall-On-Hudson, NY Quadrangle
 Contour Interval: 20 Feet



SITE LOCATION MAP

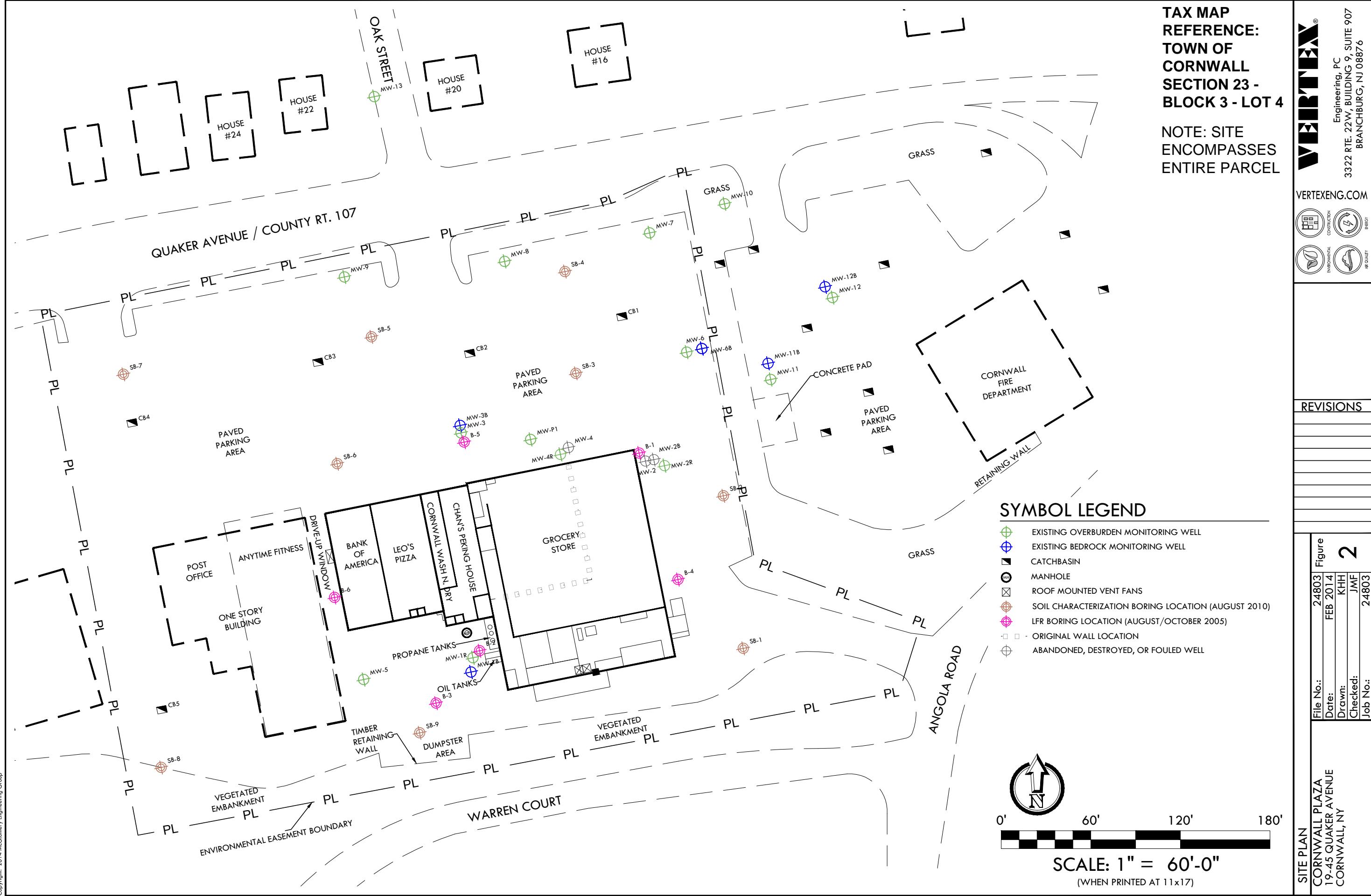
Cornwall Plaza
 19-45 Quaker Avenue
 Cornwall, New York

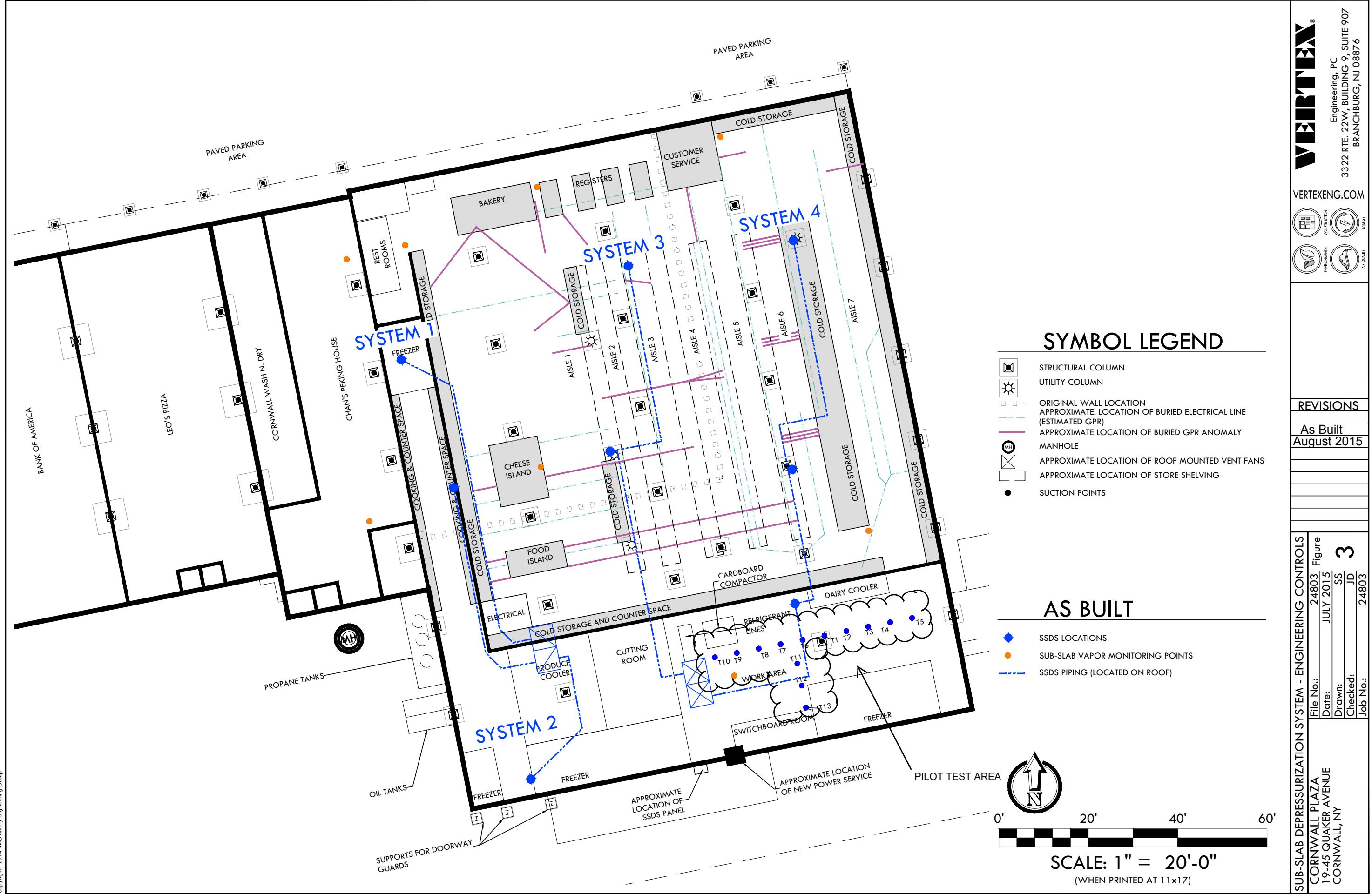
SCALE: 1:24,000

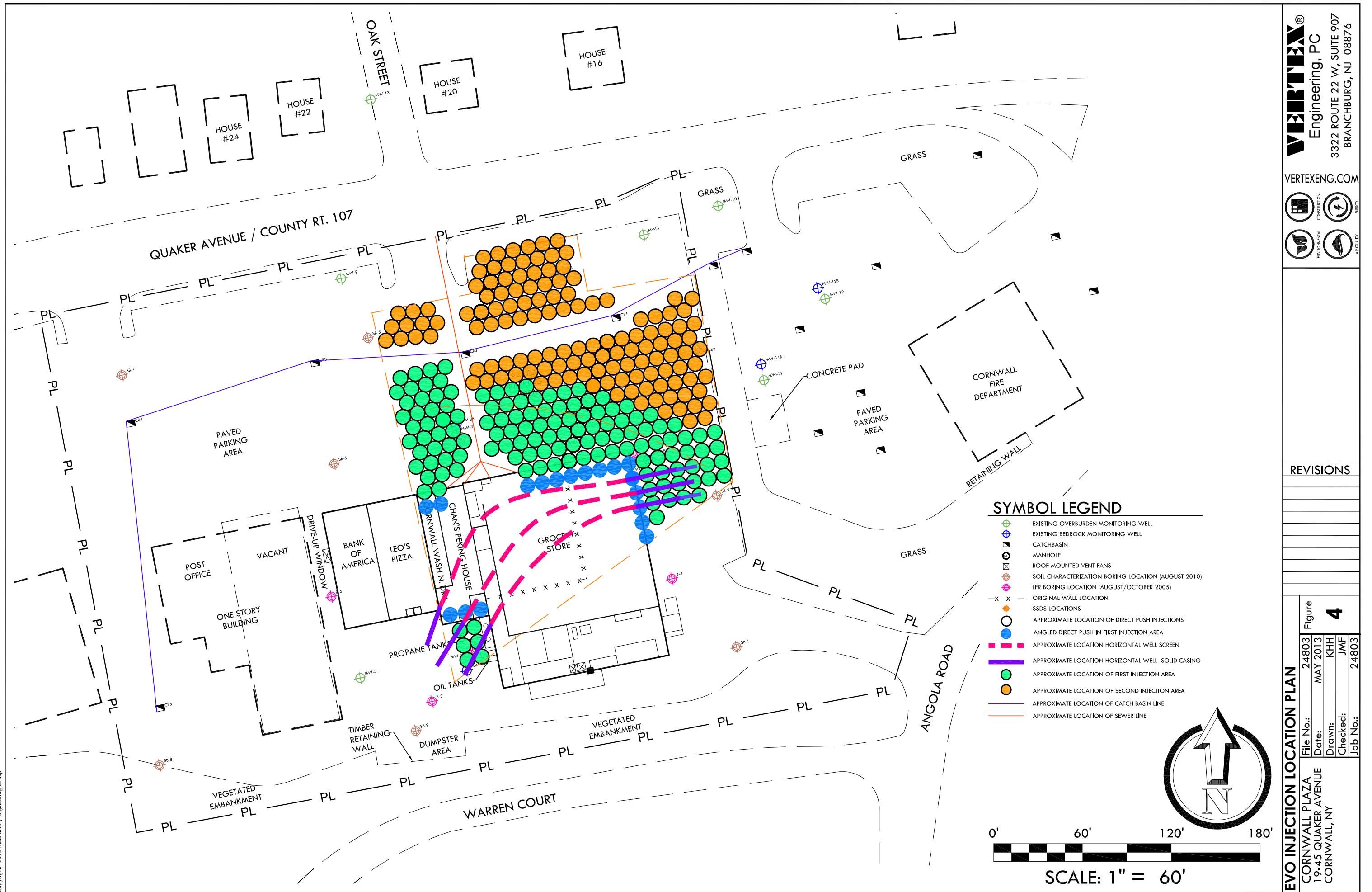
August 2015

VERTEX Proj. No. 24803

VERTEX
 Engineering, PC
FIGURE NO. 1



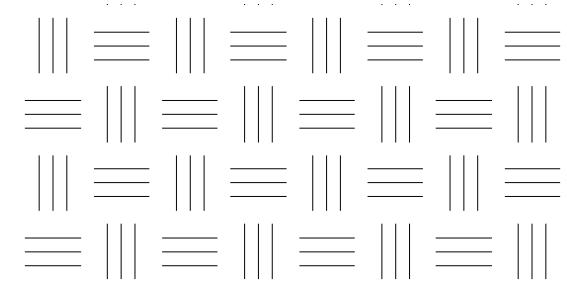






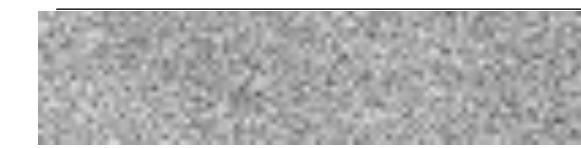


CONCRETE CAP



CONCRETE SLAB
4–6 in.

NATIVE SOIL



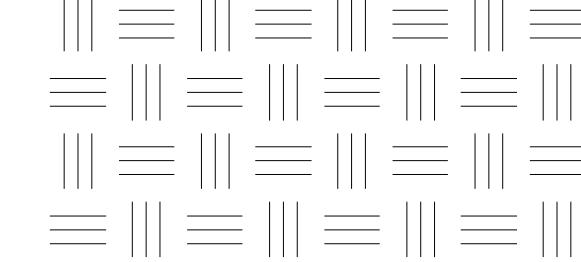
ASPHALTIC PAVEMENT

3–4 in.



GRAVEL

2–4 in.



NATIVE SOIL

ASPHALT CAP

NOT TO SCALE

ENGINEERING CONTROLS (EXISTING)

CORNWALL PLAZA

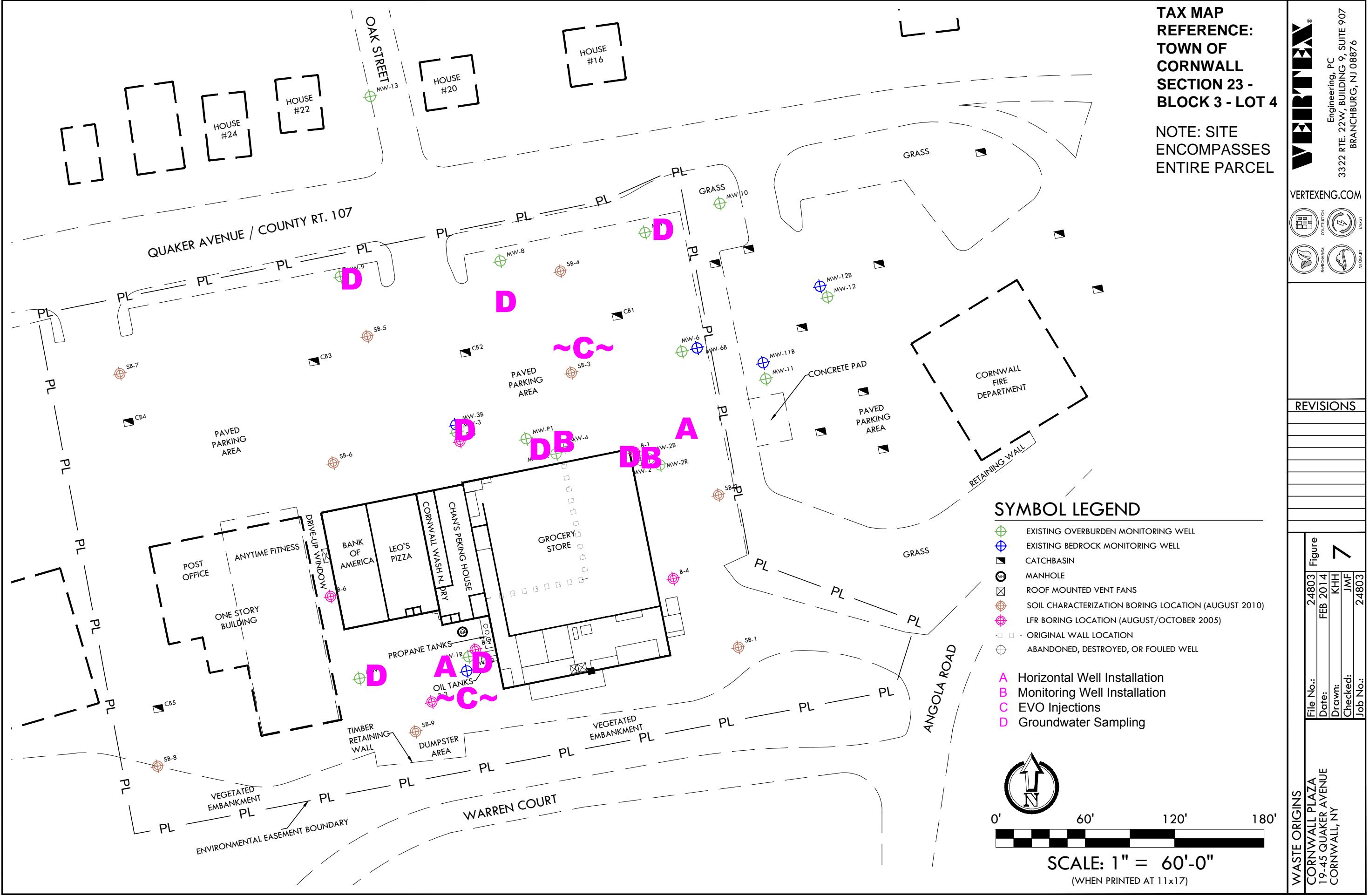
CORNWALL, NY

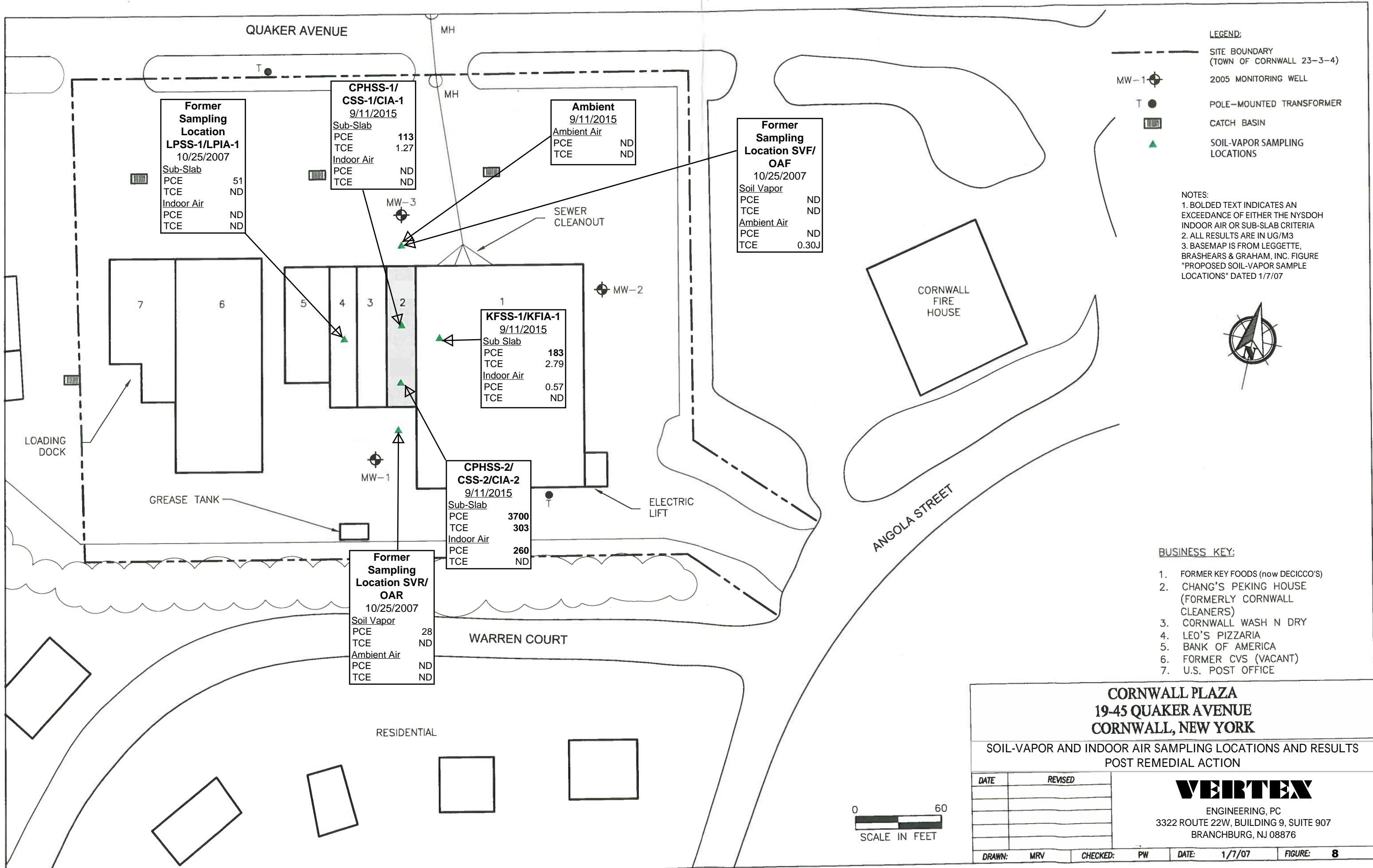
VERTEX Proj. No. 24803

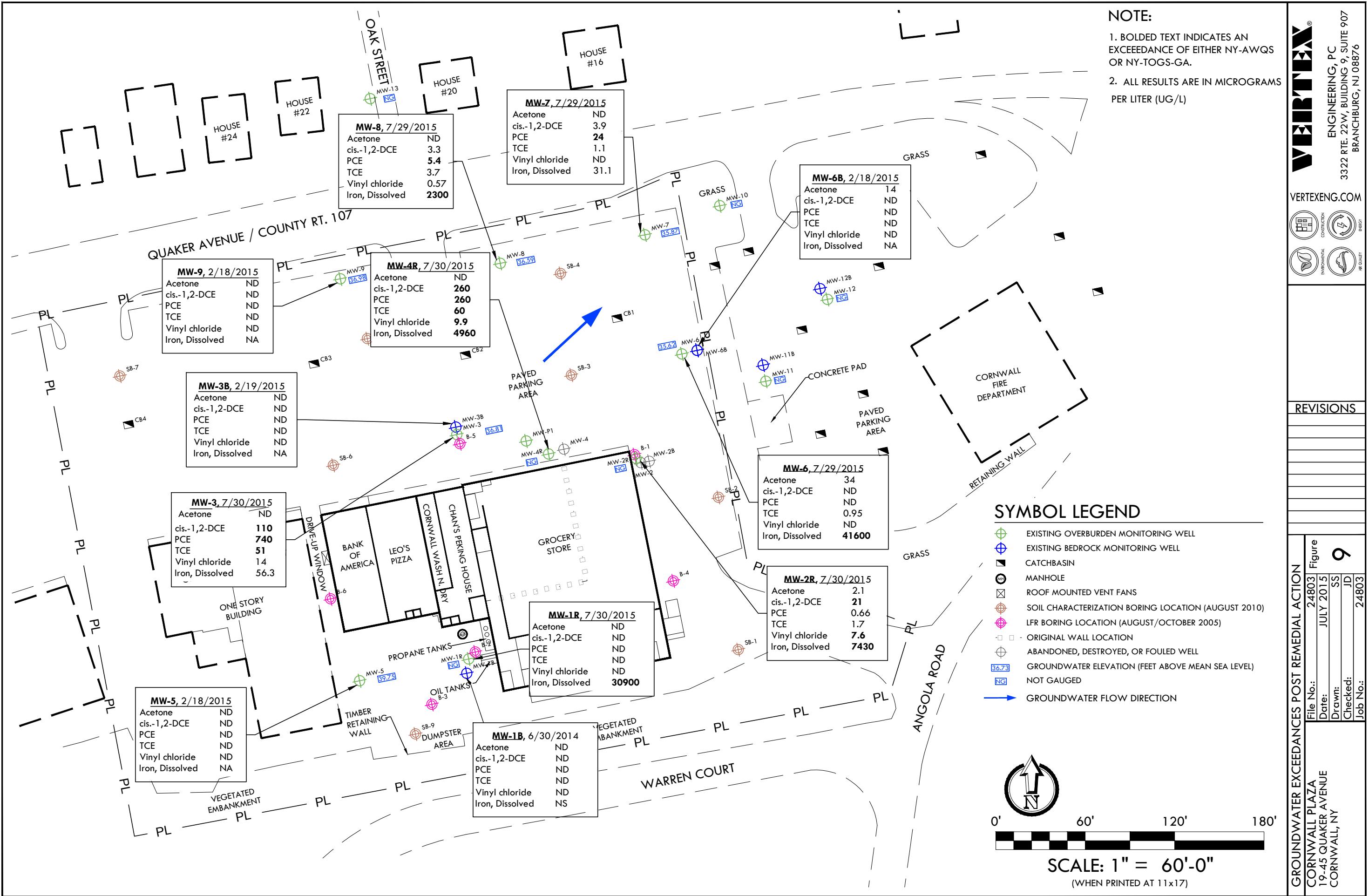
VERTEX[®]

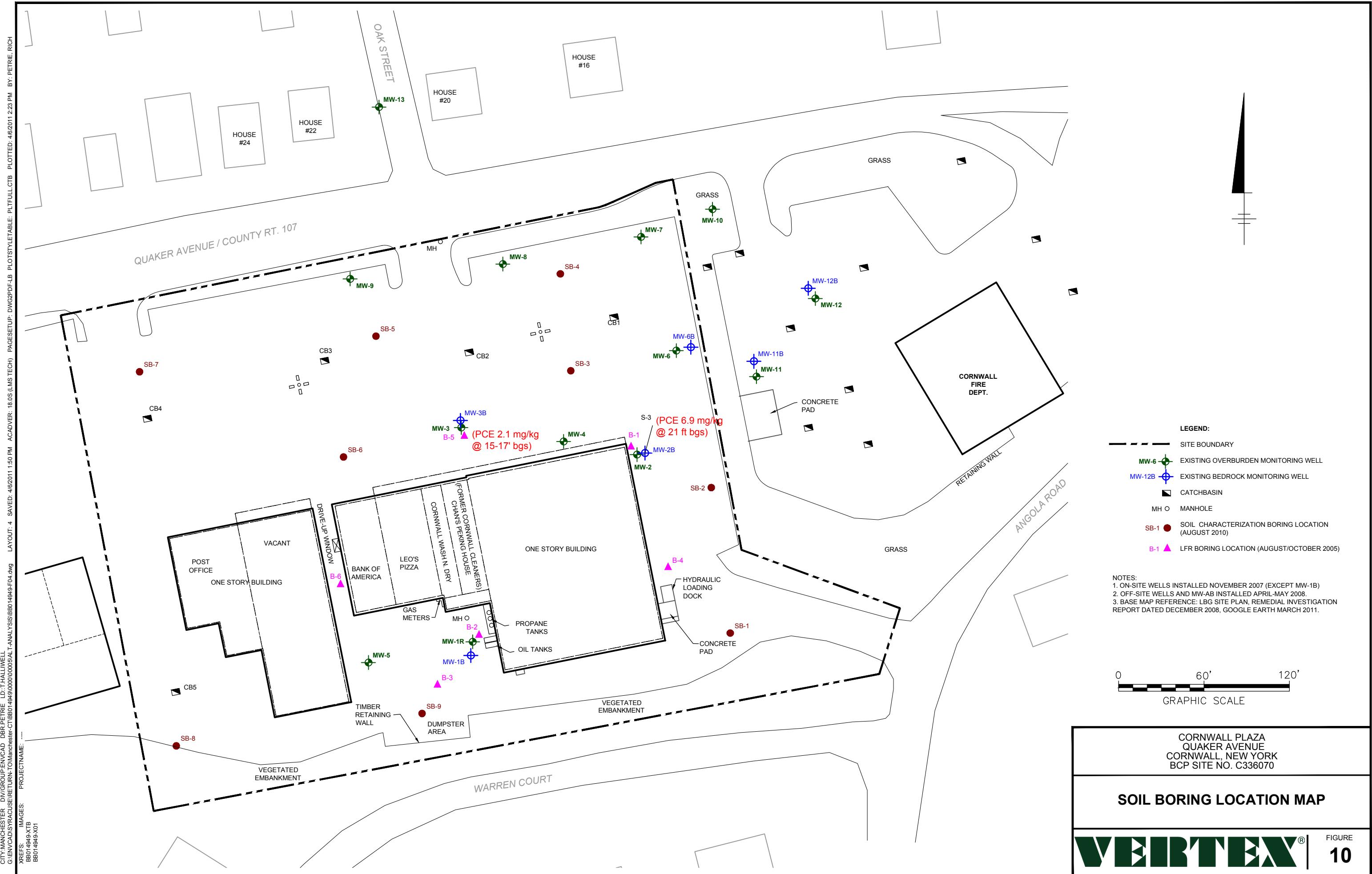
VERTEX ENGINEERING, PC

FIGURE NO. 6









LIST OF APPENDICES

- A Survey Map / Metes and Bounds / Environmental Easement
- B Electronic Copy of the FER (CD)
- C HASP
- D NYSDEC Approvals of Substantive Technical Requirements / Permits
- E Daily Field Notes, Sampling Forms, and Summary Memorandums (CD)
- F Project Photo Log (CD)
- G Waste Characterization Documentation
- H Waste Manifests (CD)
- I DUSRs For All Endpoint Samples (Incl CD)
- J RAW
- K Analytical Laboratory Data Reports (CD)

APPENDIX A

Survey Map / Metes and Bounds / Environmental Easement

APPENDIX B
Electronic Copy of the FER (CD)

APPENDIX C

HASP

APPENDIX D
NYSDEC Approvals of Substantive Technical Requirements

APPENDIX E
Daily Field Notes and Summary Memorandums (CD)

APPENDIX F

Photo Log (CD)

APPENDIX G
Waste Documentation

APPENDIX H

Waste Manifests

APPENDIX I
DUSRs For All Endpoint Samples (Incl CD)

APPENDIX J

RAW

APPENDIX K
Analytical Laboratory Data Reports (CD)